TECHNOLOGY DEPT.

TEXTILE WORLD

PUBLIC LIBRARY
OCT 3 1945
DETROIT

SEPTEMBER • 1945

Properties of
YNTHETIC FIBERS

Page 117

Also in this issue...

Textile Reconversion

Atomic Energy

THE PENDULUM SWINGS . . .

From War to Peace. From military production to civilian needs. From old to new fibers, finishes, fabrics. Will you be ready? Will your cash position be strong, your assets liquid? Will you be able to carry out your plans in a way that only READY CASH makes possible? Yes—if you make Commercial Factoring part of your strategy-for-tomorrow. Why not let us talk it over?

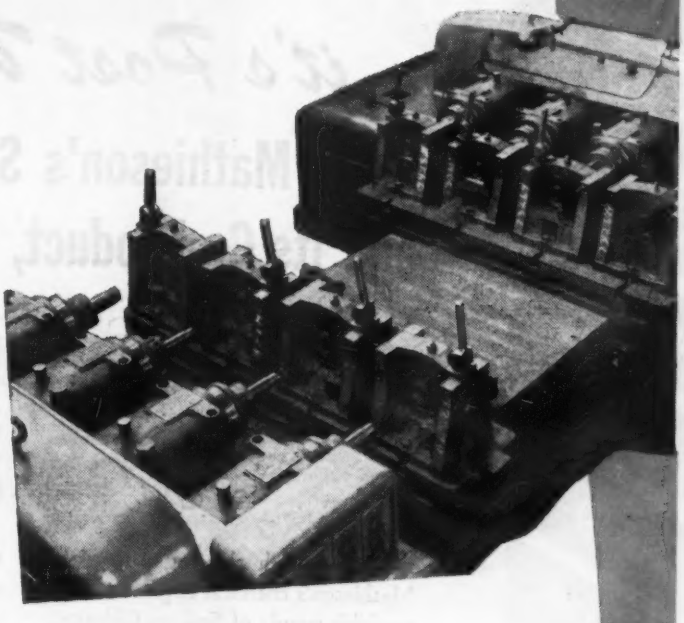
COMMERCIAL FACTORS CORPORATION

Fred'k Vietor & Achelis, Inc. Established 1828 · **Schefer, Schramm & Vogel** Established 1838 · **Peierls, Buhler & Co., Inc.** Established 1893

TWO PARK AVENUE, NEW YORK

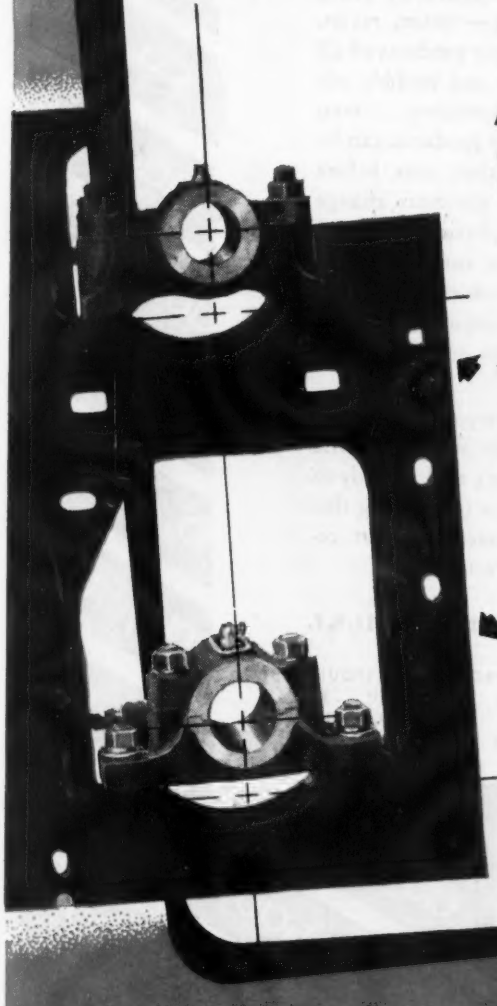
EUGENE G. LYNCH, 80 FEDERAL STREET, BOSTON, MASS.
T. HOLT HAYWOOD, WINSTON-SALEM, NORTH CAROLINA

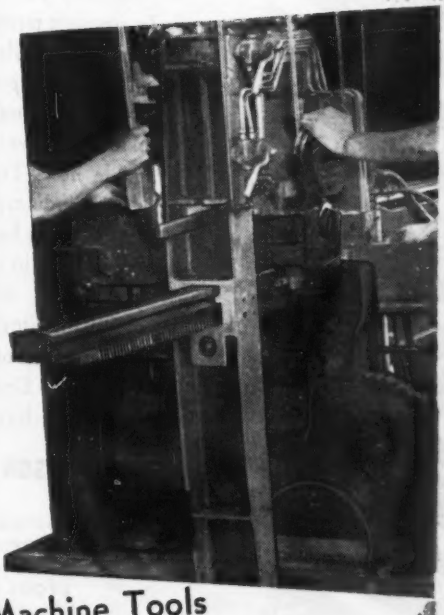
MODERN MACHINE TOOLS PRODUCE
MODERN HIGH SPEED LOOMS



8 LOOM BOXES are Bored and Faced at one time on this Modern BOREMATIC MACHINE with Special Fixtures. A Smooth Machine-Finished Hole is bored at a Perfect Right Angle to its milled base.

A Finished Box Seat being cut on Draper Loomside by a Special Broaching Machine.





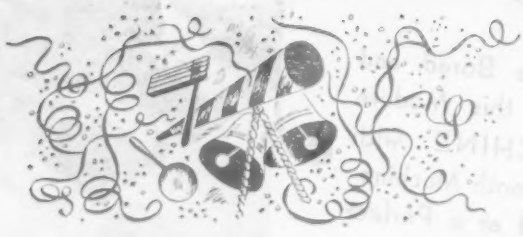
When these Loom Boxes with square-milled bases and right-angled holes are assembled on a square-finished seat on the loom frame, perfect shaft alignment is assured.

Draper Jigs and Modern Machine Tools
Produce the Essentials for
High Speed Loom Operation

DRAPER CORPORATION HOPEDALE MASS

it's Post War now

For Mathieson's Sodium Chlorite and its Co-Product, Chlorine Dioxide



YES — through the ingenuity of Mathieson's chemical engineers, the available supply of Sodium Chlorite (and its amazingly useful co-product, Chlorine Dioxide) has been stepped-up to totals almost as great as originally planned for post war!

In simplest terms, this means that this most versatile — *under certain conditions most powerful and under other specific conditions most gentle* — oxidizing agent yet developed is available *now*. To many phases of American industry and to hundreds of communities beset with taste and odor problems in their water supply systems — this announcement will be of outstanding significance.

The adoption of Sodium Chlorite and Chlorine Dioxide in the technique of bleaching is certain to result in improved quality of many products now bleached by older methods. Textiles — cotton, rayon, and nylon . . . paper products of all kinds . . . edible and inedible oils . . . shellacs and varnishes . . . even beeswax and straw products, can be bleached *whiter* than ever before with an absolute minimum change of chemical and physical characteristics through the use of Sodium Chlorite. And Mathieson's research staff is still developing more and more uses for this greatest of oxidizing agents!

Mathieson is prepared to furnish full information on Sodium Chlorite — and Mathieson's staff is ready to work with you now in adapting this outstanding chemical to your requirements. Write today!

THE MATHIESON ALKALI WORKS (INC.) • 60 East 42nd Street, New York 17, N.Y.

SODIUM CHLORITE . . . CHLORINE DIOXIDE . . . HTH PRODUCTS . . . LIQUID CHLORINE . . . SODIUM METHYLATE . . . CAUSTIC SODA . . . SODA ASH . . . BICARBONATE OF SODA . . . FUSED ALKALI PRODUCTS . . . AMMONIA, ANHYDROUS & AQUA . . . SYNTHETIC SALT CAKE . . . DRY ICE . . . CARBONIC GAS

Mathieson
CHEMICALS

TABLE OF CONTENTS

Classified According to Reader Interest

← MILL DEPARTMENTS — FIBER DIVISIONS →

YARN PRODUCTION	WEAVING	KNITTING	FINISHING	ENGINEERING	MISCELLANEOUS	FEATURE ARTICLES	PAGE	COTTON	SYNTHETIC	WOOL	MISCELLANEOUS
Y	W	K	F	E	M	Textile EVOLUTION Orderly (Editorial)	4	C	S	W	M
Y	W	K	F	E	M	RECONVERSION Lights New Road	115	C	S	W	M
Y	W	K	F	E	M	Properties of SYNTHETIC FIBERS	117	C	S	W	M
Y	W	K	F	E	M	The ATOM, New Source of ENERGY	133	C	S	W	M
Y	W	K	F			Our SPUN RAYON Industry Looks Good	141	C	S		
Y	W		F		M	EUROPEAN Textile Industry	142	C	S	W	M
Y						Waste Control Saves CARD-ROOM Dollars	147	C			
		K				KNITTING Industry Aided by Glasses	151	C	S		
Y			F			New Chemical Aids WOOL SCOURING	155			W	
				E		Oilless BEARINGS Aid Machine Design	159	C	S	W	M
Y						CARDED YARN Mills Improved Drawing	161	C			
		K	F			Handling Worsted KNIT CLOTH	165			W	
	W			E		Mechanical Handling of LOOM BEAMS	167	C	S	W	
Y						Georgia Mill Men's SPINNING Problems	169	C			
Y						Defects in Spinning WORSTED YARNS	171			W	
Y	W		F			Chicken Feather BLENDS in Fabrics	258			W	M
Y	W	K	F	E	M	International Textile STANDARDS	260	C	S	W	M
						KINKS AND SHORT-CUTS					
	W					Plate on Holder Protects PICKER STICK	184	C	S	W	M
				E		DRILL RACK Saves Time for Machinists	184	C	S	W	M
				E		BUFFING WHEELS Last Longer	186	C	S	W	M
Y				E		Short Filling BUNCH on Spinning Mule	186			W	
	W					Loom HARNESS FRAME Made With Pipe	186	C	S	W	M
Y						WOOL BALES Opened With Leverage Tool	186			W	
				E		Overbelting Increases Life of V-BELTS	186	C	S	W	M
Y						Truck Simplifies Moving WASTE CANS	188	C	S	W	M
					M	MICROSCOPE Defect Removed by Washing	188	C	S	W	M
				E		Inside Measured by Outside MICROMETER	188	C	S	W	M
				E		BROKEN NUTS Welded for Quick Removal	188	C	S	W	M
	W					PICKER STICKS Ground With Abraser	188	C	S	W	M
	W					SHUTTLE BOX Cells Cleaned With Mop	190	C	S	W	M
	W					Drill Press Polishing LOOP PICKERS	190	C	S	W	M
				E		Arc Welding Restores WORN SHAFT	190	C	S	W	M
			F		M	Sunlamp Eliminates SCORCH MARKS	190	C			
						IN OTHER DEPARTMENTS					
Y	W	K				Warner & Swasey on Textile MACHINES	177	C	S	W	
			F			Continuous WASHER for Printing Blanket	177	C	S		
Y						TRAMP IRON Removed by Air-Duct Magnet	177	C		W	
				E		New High-Speed METAL-SPRAYING Gun	178	C	S	W	M
			F			Curved Sides Strengthen Steel TANKS	179	C	S	W	M
				E		Heavy-Duty Variable-Speed TRANSMISSION	179	C	S	W	M
				E		New Fluorescent LAMPS	179	C	S	W	M
Y	W	K	F	E	M	Mills Should Know INDIRECT COSTS	196	C	S	W	M
Y						Carding Proposal Would Increase NEPS	198	C			
	W				M	Report on Belgian FLAX CROP	200				M
Y	W	K				ASBESTOS Man Wants Discussion	202				M
Y	W	K	F	E	M	Enthusiastic WORKER Can Be an Asset	202	C	S	W	M
Y	W	K	F	E	M	FOREMEN Must Watch Personal Dislikes	204	C	S	W	M
			F			Processes for FINISHING Gray Goods	208	C			
		K				Formula for KNITTING Production	208	C	S	W	M
Y						Retarded Spindle to UNWIND Yarns	212	C			
			F			Permanent Finishes for RAYON	212		S		
		K	F			Two Methods for Finishing SPORTSWEAR	214			W	
		K				MARRATTI Machine No Longer Available	216	C	S	W	
	W					Minor Weaving DEFECTS Look Like Neps	218	C			

TEXTILE WORLD

SEPTEMBER 1945 — VOLUME 95 NUMBER 9

A McGRAW-HILL PUBLICATION

Edwin D. Fowle....Publisher and Editor

C. W. Bendigo.....Executive Editor
William B. Dall.....*Managing Editor*
Harold E. Reed.....*Assistant Editor*
Prentice M. Thomas.....*Assistant Editor*
Earle Mauldin.....*Southern Editor* (Atlanta)
C. M. Bowden...*Southern Editor* (Charlotte)
H. S. Knowlton....*New Eng. Editor* (Boston)
C. Norris Rabold.....*Consulting Editor*
Paul Wooton.....*Chief, Washington Bureau*
Gladys Montgomery.....*Washington Editor*
Robert M. Fink.....*Art Director*

William Buxman .....Manager

Published monthly. United States and Possessions and Latin American Republics, $1.50 a year; Canada and all other countries, $2 U. S. currency or 12 shillings. Single copy, 25c. Please indicate position and company connection on all subscription orders. Annual index in "Textile World Yearbook & Catalog."

McGRAW-HILL PUBLISHING CO., INC., Publication Office, 99 N. Broadway, Albany 1, N. Y. Editorial and Executive Offices, 330 W. 42nd Street, New York 18, N. Y.—JAMES H. McGRAW, *Founder and Honorary Chairman;* JAMES H. McGRAW, Jr., *President;* CURTIS W. McGRAW, *Senior Vice-President and Treasurer;* HOWARD EHRLICH, *Vice-President for business operations;* WILLARD CHEVALIER, *Vice-President for editorial operations;* HENRY G. LORD, *Vice-President;* J. A. GERARDI, *Secretary;* J. E. BLACKBURN, *Director of Circulation.* Braadon, Lord & Nagle Division—FRANK L. NAGLE, *Chairman;* HENRY G. LORD, *President.*

District Offices—Atlanta 3, Ralph C. Maultsby, Dist. Mgr., 1011 Rhodes-Haverty Building; Boston 16, Ralph L. Chisholm, Dist. Mgr., 1427 Statler Building; Chicago 11, M. C. MacKenzie, Dist. Mgr., 520 North Michigan Ave.; New York 18, Arch W. Fisher, Dist. Mgr., 330 West 42nd Street; Philadelphia 2, H. C. Harvey, Dist. Mgr., 16 South Broad Street; Washington 4, National Press Building; London WC 2, Aldwych House.

Of this issue 18,100 copies were printed

Member of Audit Bureau of Circulations
Member of Associated Business Papers, Inc.

Contents copyrighted, 1945 by McGraw-Hill Publishing Co., Inc. (All rights reserved)

DEPARTMENTS

Book Reviews 194
Editorial 4
Free for the Asking.....262
Kinks and Short-Cuts.....184
Mill Maintenance 182
New Dyes and Chemicals....182
News About Men.....288
News About Mills.....280
News About Suppliers.....274
News of the Month.....266
Pete and Bill.....193
Questions and Answers.....208
Round Table 196
Textile Equipment News.....177

THE *Long-Range View*

TEXTILE EVOLUTION Remains Orderly

A radically changed future lies immediately ahead of the textile industry. It isn't just the end of the war, which is releasing for civilian use wartime developments, nor even the feverish activity now in fields held fallow during the war. Its roots go far back, even to the early days of rayon.

The revolution started by synthetic fibers is accompanied by one in natural fibers, some of it, at least, stimulated by the synthetics. It is not just a battle of synthetic fibers with natural fibers or with themselves; but it is, in part, the real beginning of a period in which fibers are manufactured or modified to achieve the best properties required for particular uses. Engineered, some call it.

Years back, many persons realized that synthetic fibers must do more than emulate natural fibers, with merely the hope of supplanting them. Years ago persons vitally interested in the natural fibers realized the threat of "artificial silk" competition, as well as the more difficult and exacting demands of a more highly developed industrialization. Both groups were instrumental in starting research in all its phases, abstract and applied.

While one group developed radically new synthetic fibers or improved older ones, the other sought to improve the natural fibers. Some of the latter group adopted the principle that if chemical methods can produce new fibers, similar means can be used to improve natural fibers. A few organizations worked with both natural and synthetic fibers, realizing that each fiber has at least one unique property that keeps it in competition with the others.

Development of fibers is only a part of the story. Similar efforts have been, and are being, expended on machines and methods.

The number of organizations that feel there is a future in working out new ideas, or improving old ones, in the fibers and machines employed by the textile industry includes others than just those engaged primarily in textiles. It includes General Electric, Sperry, Carbon & Carbide, Union Carbide, Warner & Swasey, Corn Products, Dow Chemical, U. S. Rubber, Firestone, Goodrich, Goodyear, the Department of Agriculture, the Iron & Steel Institute, to name a few known to be interested.

Every textile organization of any consequence has its own staff to create and work out new ideas and in addition supports or retains groups outside its own organization such as the Institute of Textile Technology, Cotton-Textile Institute, Textile Foundation, Textile Research Institute, National Cotton Council, Callaway Institute.

Then there are the developments by the groups that act as suppliers to the textile manufacturing industry. They are probably the most aggressive of all, since every new development means more directly something to sell. This group includes the synthetic-yarn producers, the dyestuff and textile-chemical houses, the textile-machinery builders.

But the important thing is that many of the fruits of all this research and development are ripening now. There is such an impressive array to choose from that it is difficult to decide with which a man should identify himself. Which of the many possible protein fibers? Which of the methods for improving cotton tire-cord—or which of the synthetic-yarn cords? Which of the hosiery yarns that might compete with nylon?

What about all the new techniques for spinning, weaving, knitting, dyeing, printing, and finishing? For example, electrostatic fiber alignment, tow-to-top, shuttleless weaving, stabilized-stitch knitting, resin dyeing, printing with light, all the various "proofing" finishes. There is, of course, also the manufacturing of webs, felts, and bats—some with a thermoplastic fiber content as a binding agent to give strength and stability never before achieved.

The problem often comes up whether to modernize to take advantage of particular new developments, whether to add new lines, or whether to change over completely to some new phase of textiles.

Small wonder many mill men want to "wait and see" what develops. But the leaders of the industry will be those who seize upon the new possibilities—correctly.

It is inconceivable that any will ever again be able to operate for 20 or 30 years, or even 10, without materially changing equipment or methods, as some did in the past.

Regardless of what the textile industry will be like in the near future, it certainly will be different.

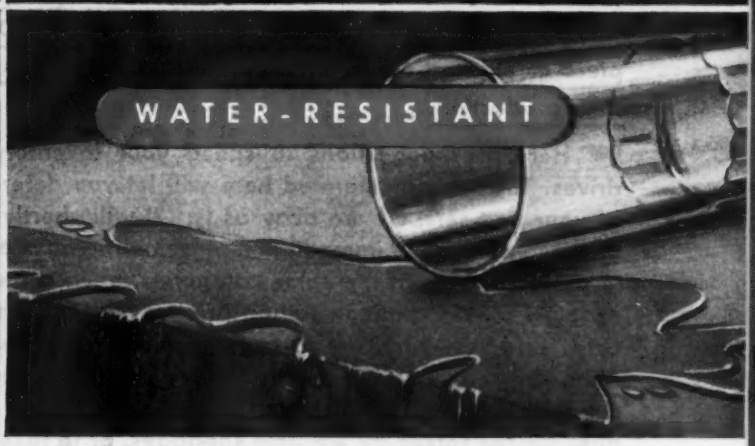
This is by no means an endorsement of any of the claims that some fiber or fabric will almost overnight revolutionize the textile industry. Whatever changes there are will come in an orderly fashion along lines that will be evident to everyone in textiles who makes any effort at all to keep himself informed. Management with sound judgment should not hesitate to make decisions on the basis of information now available.

C. H. Bendigo

VITA-CLOR FINISHES

REG. U.S. PAT. OFF.

For textile products



Vita-Clor Finishes will make natural and synthetic fibres, or their mixtures

Resistant to { **Flame** **Weather** **Mildew** **Water**

Finishes for textiles or fabrics can be coated, impregnated and treated by your standard finishing-room methods. Vita-Clor Finishes are supplied clear or in colors.

Write for Your Copy of the VITA-VAR Product Finishes Folder

ARMY E NAVY

VITA VAR CORPORATION
PAINT ENGINEERS SINCE 1888

VITA-VAR CORPORATION

PAINT ENGINEERS SINCE 1888 — NEWARK, NEW JERSEY

BULLETIN!

How to Take a Reconversion Inventory of Your V-Belt Drives

☛ As manufacturing equipment becomes more widely available, and as you reconvert your production toward a peacetime basis, you may be faced with an unprecedented problem of inventory-taking.

☛ You may have to determine—more quickly than such a job has ever been done before—the EXACT CONDITION of every piece of existing equipment that you propose to use in peacetime production.

☛ Here are suggestions to speed your inventory of V-belt drives. The standards stated here will let you determine which of your *belt sets*: (1) are okay as is; (2) will shortly require replacement; (3) need immediate replacement. You should be able to place *sheaves* in the same categories, or in a fourth: (4) are obsolete . . . a common failing of sheaves, now that "Magic-Grip" and Vari-Pitch Sheaves are becoming more readily available. Or you may decide that entire *drives* belong in a fifth classification: (5) need re-engineering . . . either to correct misapplications forced by wartime shortages, or to take advantage of new developments such as Allis-Chalmers' Variable Speed Drives, with either Stationary or Motion Control.

1 START YOUR INVENTORY WITH THE RECORDS

Your records will reveal much that will be of value to you in appraising your present multiple V-belt drive equipment and in establishing its place in reconverted production.

Purchase records should show which drives have required new belts too frequently. While there's no overall rule to tell you how long a belt should last, it's safe to assume that *whenever you spot a drive* whose belts wear out *much* more rapidly than all the others, *you've found a place* where a change will save you money.

Maintenance records and *machine operating records* will reveal useful facts. Is a machine often down while belts are replaced? While sheaves are changed? Then there's room for improvement. Check trouble spots *first*. You can spot these trouble spots if you'll *start with the records*.

2 THEN CHECK DRIVE ENGINEERING

V-belt wear will be excessive — too costly for competitive peace-time operation — unless the drive is tailored to its particular power transmission job in the following respects:

Diameters—Depending on the thickness of its section, every V-belt has an "easy arc". Bend it more sharply (around a sheave of too small diameter) and the internal friction of excess flexing will cook the life out in far too short a time. In general, minimum sheave diameters for belts of given section are as follows: A—3.0"; B—5.4"; C—9.0"; D—13.0"; E—21.6".

Centers—The shorter the centers in a drive, the fewer feet of belt that can stretch—the lower the potential stretch to threaten slippage and crack-the-whip action. Thus proper engineering aims at short centers. (Short centers have the further advantage of saving valuable floor space . . . an important consideration in many factories.) In every reapplication of V-belt drives for reconverted production, remember . . . *keep centers as short as possible.*

Number and size of belts — Each V-belt is rated for horsepower; simple mathematics will tell you how many of what size you'll need for a given job. When reconverting, it's wise to *check this again* . . . the war has produced many undesirable makeshifts. Remember, though, that number and size don't tell the whole story—*speed counts too.*

Belt speed—Just as a truck's motor can pull a heavier load by traveling faster, so a set of V-belts can pull a heavier load by traveling faster. In a truck, it's a case of using a "lower" gear. In a V-belt drive, it's the same . . . using larger sheaves which have a higher rate of rim travel, thus producing higher belt speed. See the V-belt manufacturer's catalog for limits of speed recommended for any given belt.

Contact arcs—All horsepower ratings for V-belts are based on a 180 degree arc of contact with sheaves. However, this factor varies from one drive to the next—depending on its ratio and centers—and must be carefully considered in re-engineering any drive.

Tension—Each drive should be equipped with an effective tension adjustment. Belts that are too loose will slip, rub on the groove walls, heat up, and have the life cooked out of them. And when the wave curve in a loose belt whips it *tauter* across the tension

side of the drive—that belt grabs at the load, may snap. So—in checking V-belt drives for reconverted production, it's important to see to it that each set of belts has proper tension. The easiest and quickest rule-of-thumb test for proper tension is this: "A slack V-belt feels dead when you thump it with your hand; a properly taut V-belt has an alive springiness."

Alignment—Unless the shafts of the driving and driven sheaves are *parallel,* it's impossible to put *all* belts in the set at proper tension . . . and all belts run at an angle, rubbing on the groove walls, heating themselves for an early death. In reconverting for a competitive production, check parallelism of shafts . . . and check too to see that *sheave grooves* are *in line.* Out-of-line sheaves also subject belts to needless rubbing on the groove walls.

If any of your V-belt drives is notably weak in any of the above seven points, consider re-enginering the drive.

3 THEN INSPECT V-BELTS

Your inventory of working V-belts will reveal far more than just their condition; it will also show what should be done to correct existing conditions that promote V-belt wear—an important consideration in cost-conscious, competitive production. Check every belt in every set for the following tell-tale signs; note condition of belt, cause, and recommend cure.

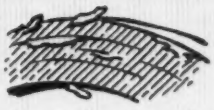
Checking these points is especially important if you're planning a *continuous* operation where belt breakage would be fatal. You can spot about-to-break belts by looking for:

SCUFFING — *Cause*: Bolts protruding inside the guard may do this. Such scuffing can exert enough "braking" to cause sudden snap and break belt.

Cure: When placing guards or steelwork near drives, anticipate some sag . . . leave enough clearance.

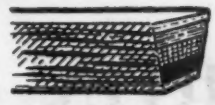
SLIP BURN — *Cause*: Belt too loose to pull its load. Belt stands still, rubbing on spinning driving sheave, heating and melting the rubber.

Cure: Keep belt taut, and sheave grooves free of oil and grease. Check machine for overload.



OIL-SWELLING *Cause*: Belt is is swelled and weakened by chemical action of oil.

Cure: Provide splash guards, or use Oil-Resisting or Oil-Proof Texrope Belts.



ABRASION — *Cause*: Abrasive dust wears the sidewalls, narrowing belt width. Then belt slips, rides on bottom of groove.

Cure: Provide dust guards, keep proper tension.

4 CHECK BELT ENGINEERING

Because Allis-Chalmers belt development during wartime followed the familiar pattern of many industrial achievements—moving swiftly and outmoding many previously-acceptable types—it is *not* wise policy to replace belts by blindly ordering the same kind used in the old installation. Belts have become specialized for better economy, safety and dependability. It is time now to take a look at qualities of the new belts, and to take advantage of the special properties they have been given through use of new synthetics in their manufacture.

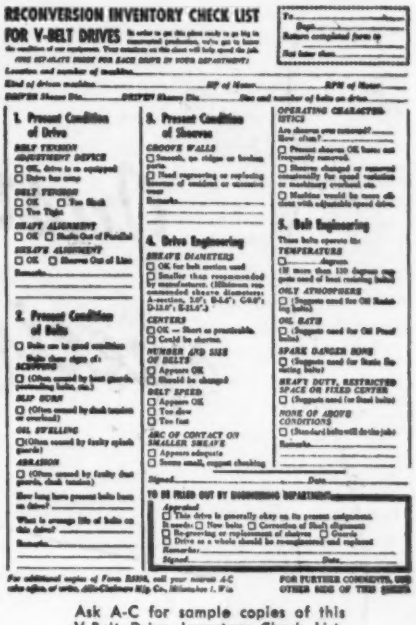
NOTE: THE MATCHED-SET PRINCIPLE —When one or two V-belts in a set are worn out or damaged, remember that the remaining V-belts have stretched beyond their original length, making it impossible to put proper tension on an old set to which *new* belts have been added. Adding new belts is therefore likely to be false economy . . . the new belts will overwork, lasting for only a fraction of their normal life. Rather than throw good money after bad, always install a complete, scientifically-matched set, storing old belts to use as replacements in other old sets.

5 INSPECT SHEAVE WALLS

For smoothness—What makes a V-belt grip the sheave? Not mere surface friction, but the *wedging* action of the bending and expanding belt. So sheave grooves may be smooth . . . *should* be smooth, to minimize belt wear. Watch out for ridges or burrs in the groove walls; if they're bad, re-groove or replace the sheave. Increased belt life will soon pay the cost.

For straightness—The sides of the V should be *straight;* if they're not, drive won't be truly efficient, belt life will be short. Some sheaves — misaligned or in hard usage — get "shoulder wear" in groove walls. Lay a straight-edge against the wall, look for a light gap. If you find hollows deeper than the thickness of a playing card, sheave needs truing.

REPLACE? OR REGROOVE? You'll have to make this decision. Note this: where small, inexpensive stock size sheaves show need for re-truing of grooves, time and trouble can often be saved by scrapping them and replacing with new sheaves. It may pay out, however, to re-groove special or large-diameter sheaves, or to return them to the factory, where a nominal charge is made for this service.



RECONVERSION INVENTORY CHECK LIST FOR V-BELT DRIVES

1. Present Condition of Drive
2. Present Condition of Belts
3. Present Condition of Sheaves
4. Drive Engineering
5. Belt Engineering

Ask A-C for sample copies of this V-Belt Drive Inventory Check List.

CENTRIFUGAL PUMPS, ELECTRIC MOTORS NEED INVENTORY TOO!

All three of these common industrial units — V-belt drives, centrifugal pumps, and electric motors — are covered in Allis-Chalmers' new *Reconversion Inventory Kit.* No big package, this Kit is simply a set of Fact Sheets and Check Lists, with suggestions for Inventory procedure as outlined on these pages but in slightly more detail.

A 1884

GET THESE FREE FORMS!

For your supply of Reconversion Inventory Kits, covering V-belt drives, centrifugal pumps, and motors, call your nearest Allis-Chalmers district office or distributor, or write Department 116, ALLIS-CHALMERS MFG. CO., MILWAUKEE 1, WIS.

ALLIS CHALMERS

You're ready to RUN NYLON... now that you have it

Just specify

Pro-Nyl
KNITS NYLON DRY
TRADE MARK

Forget the equipment you thought you needed to run Nylon. Your plant is ready to go into full production now.

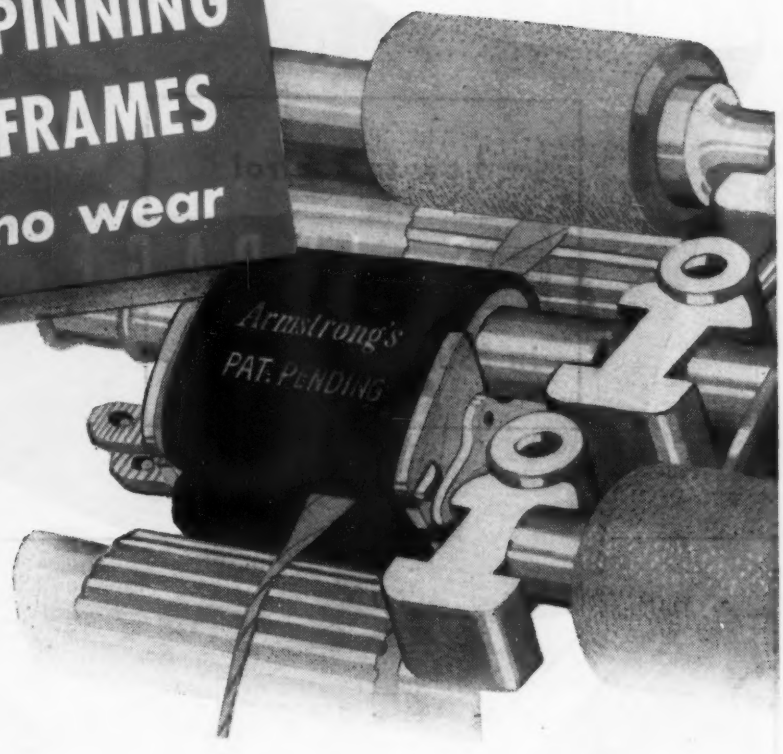
With Pro-Nyl treated yarn, no air conditioning—temperature control—titration is necessary. All you need is the Nylon—then run it like Rayon—run it DRY.

PRO-NYL is ready for delivery

WRITE FOR INFORMATION

SPECIALTY PRODUCTS COMPANY
190 Warren Street Jersey City 2, N.J.

3 YEARS ON SPINNING AND ROVING FRAMES ...with almost no wear



Mills report Accotex Aprons have extra-long life

HERE is striking evidence of the durability of Armstrong's Long Draft Accotex Aprons. Three years ago many mills equipped their spinning and roving frames with Accotex Aprons. In continuous service ever since, many running on a two- and three-shift basis, these same Accotex Aprons show little sign of wear.

This superior performance is due to a special seamless construction developed by Armstrong. A sturdy cord interliner is sandwiched between two heavy layers of non-oxidizing, highly oil-resistant synthetic rubber. This affords a substantial wearing thickness on both the inside and outside of the apron . . . prevents stretching during operation.

Accotex Aprons offer four additional important advantages which increase both poundage and quality:

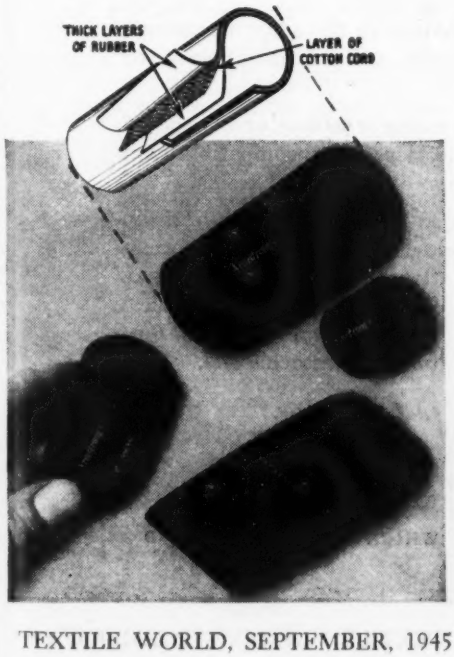
CLEAN-RUNNING WORK: Accotex Aprons do not crack, scuff, or break open during operation.

UNIFORMITY: All Accotex Aprons have the same composition throughout, and dimensions of every size are uniformly accurate.

REDUCED LAPPING: Accotex Aprons are unaffected by changes in either temperature or humidity. They perform with a minimum of lapping.

GOOD FRICTION: The efficient "grip" of Armstrong's Accotex Aprons keeps slippage to a minimum.

Ask your Armstrong representative for samples, prices, and complete information on Accotex Aprons. Or write Armstrong Cork Co., Textile Products Dept., 8309 Arch St., Lancaster, Pa.



ARMSTRONG'S ACCOTEX APRONS

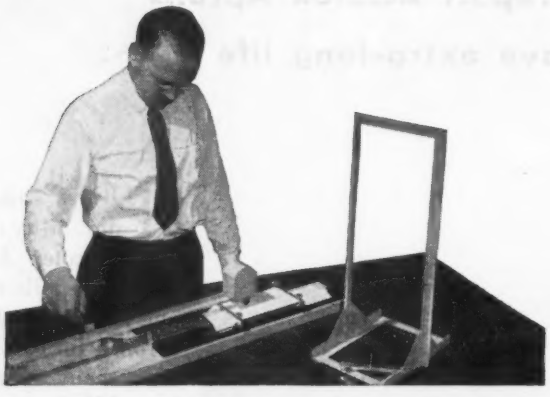
CORK COTS • ACCOTEX COTS

how to control SLIPPAGE in fabrics and fibers

Sheer rayon, cotton and nylon are notoriously subject to *slippage*—the displacement of warp and filler threads by uneven tensions or abrasion.

How to control this slippage . . . with its loss of appearance, durability and sales values . . . in otherwise good fabric, has long been a problem in the textile world.

Now, from Monsanto's textile research laboratories, comes for the first time, a proved, practical solution—Syton* W20, a modified highly polymerized silica in water dispersion.



Accurate measurement of slippage is made in this fabric shift-tester. Operator is tightening jaws on the sample. The pressure required to slide one set of yarns of the fabric along the other yarns is called the shift point of the fabric and is reported in pounds. Many determinations are usually made and an average taken.

How Syton Works:

Slippage in fabric occurs because the slick, practically frictionless surfaces of warp and filler threads, like a stack of eels, do not adhere to each other.

What Syton W20 does is to provide these threads with genuine *non-skid* surfaces! When the fabric is dipped in Syton W20, the sub-microscopic particles in the solution penetrate the fibers, and form a translucent deposit which greatly increases the coefficient of friction between fibers and thus hinders movement when the fabric is stressed or abraded.

The low concentration of Syton required leaves the fabric supple and resilient. In fact, two secondary advantages to slip-proofing are achieved in the same treatment: a crisp, dry, silky finish, and a quality delustered appearance.

Syton requires no curing or setting, or any special equipment for application. It is compatible with other finishing agents, dyestuffs and resins.

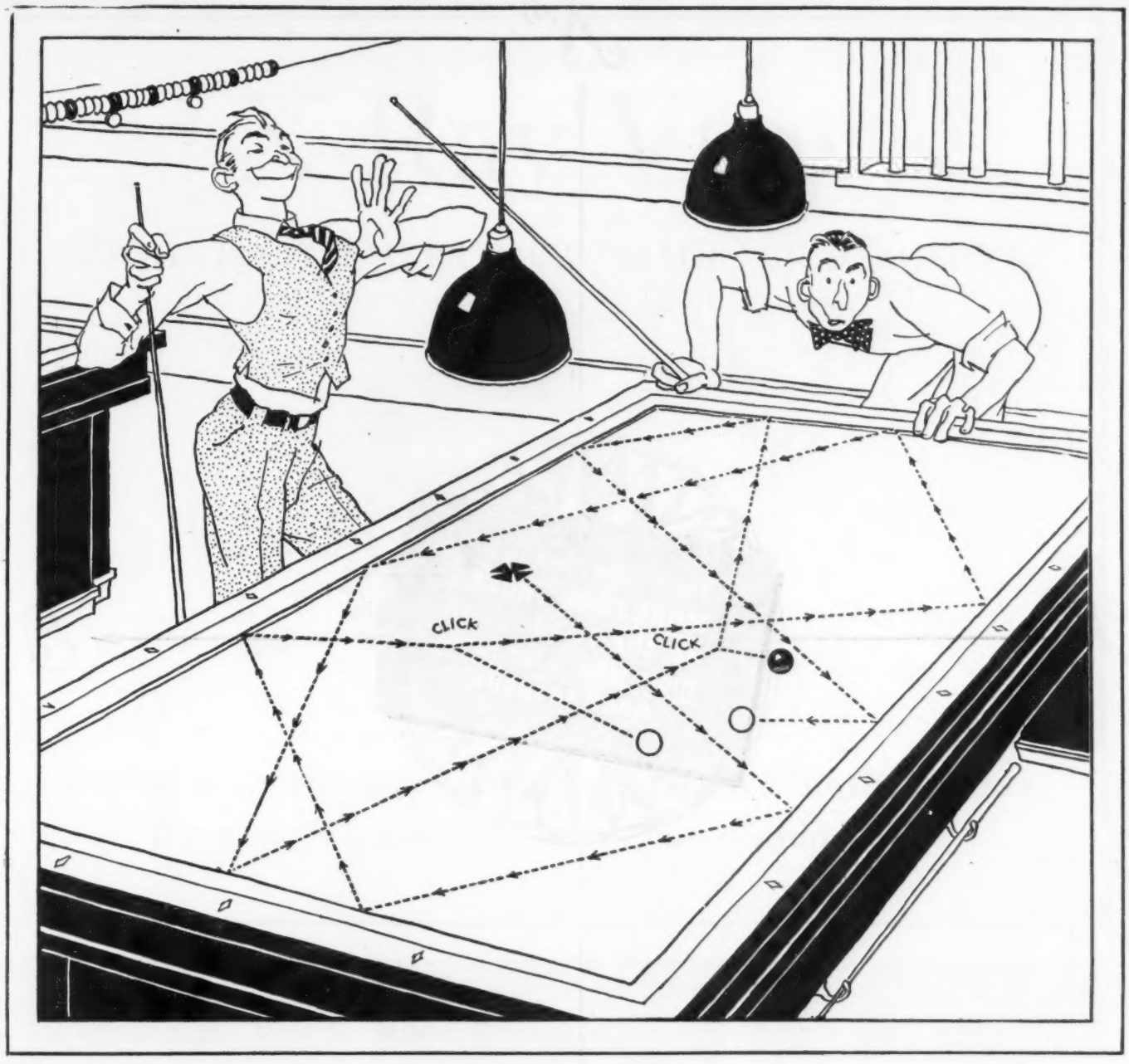
If you are interested in Syton W20 for anti-slip finishes for your fabrics, send for complete information to MONSANTO CHEMICAL COMPANY, Textile Technical Service, Everett Station, Boston 49, Massachusetts.

**Reg. U. S. Pat. Off.*

The Textile SERVING ^ INDUSTRY...

MONSANTO CHEMICALS AND PLASTICS

WHICH SERVES MANKIND



Nothing Rolls Like a Ball . . .

. . . and this triumphant gentleman profits by his skilled application of that fundamental fact.

That same fact, applied in New Departure *Ball* Bearings, brings new efficiency—and profit—to industry. Industry which *must* "keep 'em rolling"—(and nothing rolls like a ball).

Today, Industry is faced with new and mounting problems of higher speeds, heavier loads and greater and greater precision. *Ball* bearings carry the loads on free-rolling steel balls—*making possible* higher speeds, heavier loads and greater precision.

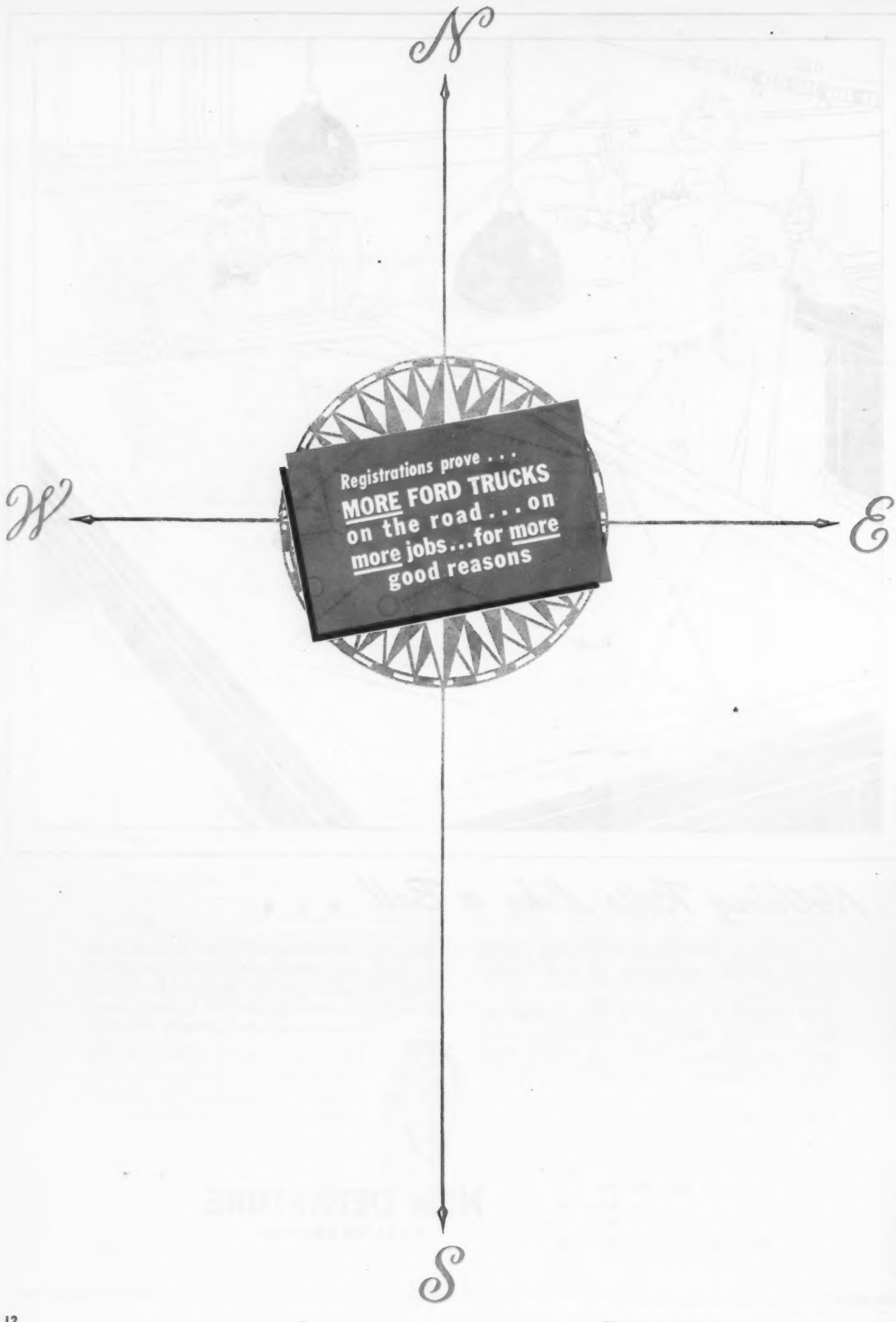
Yes, in millions of applications, New Departure Ball Bearings are proving their *unique* fitness for the new scheme of things mechanical.

There is more for you in New Departure Ball Bearings than steel and precision. Advanced engineering and a desire to serve are tangible plus values.

NEW DEPARTURE
BALL BEARINGS

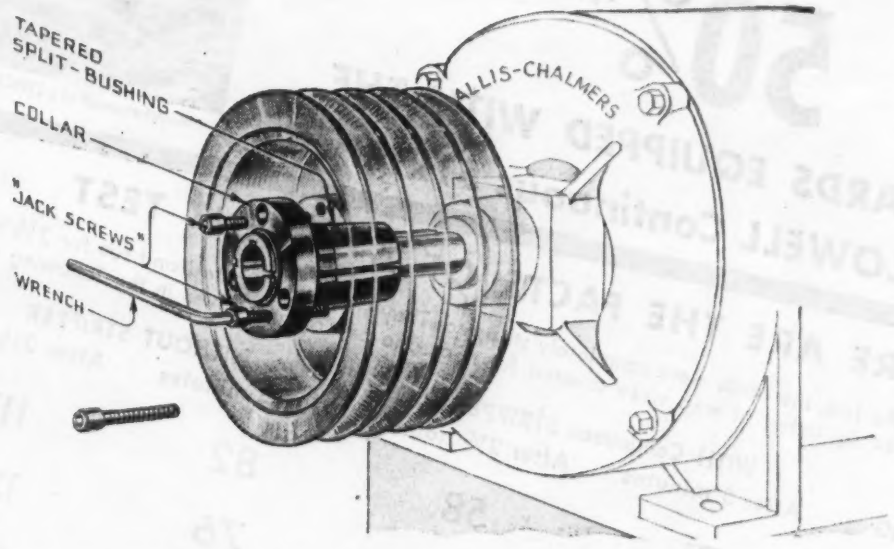
3380

NEW DEPARTURE • DIVISION OF GENERAL MOTORS • BRISTOL, CONN. • Branches in DETROIT • CHICAGO • LOS ANGELES and Other Principal Cities


N
W
E
S
Registrations prove . . .
MORE FORD TRUCKS
on the road . . . on
more jobs . . . for more
good reasons

X-Ray View

OF ALLIS-CHALMERS' NEW "MAGIC-GRIP" SHEAVE



Fastest mounting and demounting sheave on the market, the new "Magic-Grip" costs you nothing extra.

1 **Remove three capscrews** from bushing collar. A handy wrench — supplied with each sheave — is the only tool needed to remove Allis-Chalmers' new "Magic-Grip" from motor or machine shaft quickly and easily.

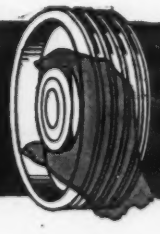
2 **Insert two capscrews** in tapped holes. As screws are turned, they become levers . . . automatically breaking tight grip of tapered split bushing on sheave and shaft. Entire unit is then ready for removal.

3 **Remove sheave from shaft.** Requires no mallet, no prying, no bulging muscles. You just slide the sheave off . . . smoothly, quickly. *It costs nothing extra!* Send for B6310. Allis-Chalmers, Milwaukee 1, Wis.

A 1770

Allis-Chalmers Texrope

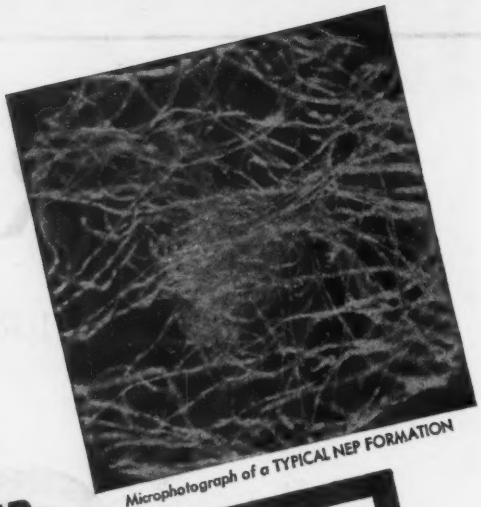
"MAGIC-GRIP"



SHEAVES

NEP COUNT REDUCED 50%*

ON CARDS EQUIPPED WITH THE SACO-LOWELL Continuous STRIPPER



Microphotograph of a TYPICAL NEP FORMATION

HERE ARE THE FACTS OF A RECENT TEST

Before making the test, the cards were completely stripped. They were then started and run for 2½ hours, at which time 144 sq. inches of web were counted for neps. The nep count is given in the following table.

CARDS OPERATING	WITH Continuous STRIPPER		WITHOUT STRIPPER	
	After 5 minutes	After 2½ hours	After 5 minutes	After 2½ hours
A	71	58	82	117
B	74	39	86	103
C	74	75	86	
D	70			

*This test was conducted by the research staff of a large New England mill in cooperation with the card erectors of the Saco-Lowell Shops.

ADDITIONAL FACTS ABOUT THE TEST

Cards were reset before test was started so that settings of various parts were the same.

• • •

At start of the test cylinders and doffer wires were examined and found to be in very good condition.

• • •

At finish of the test, wire was again checked on each card and cards equipped with Continuous *Stripper were found to be in better condition than the wire on cards without the stripper.*

• •

During the test every can of sliver delivered from the cards had four yards of sliver taken from it and weighed.

• • •

During the test ten flat strips were weighed from each card and it was found that the flat strips on Cards with the Continuous *Stripper were much lighter.*

The origin of neps is somewhat obscure. Some are caused by diseased fibers, others by poor ginning, and still others by conditions prevailing in the mill. Whatever the cause, neps are a serious detriment to the production of quality yarn and fine cloth. While neps cannot always be entirely eliminated, tests have shown that with efficient operating equipment they can be reduced to a minimum.

The card room is the one place where neps which have escaped the cleaning action of the Opening, Picking, and Blending Reserve can be further attacked. The test reported above is proof of this. Study it carefully, notice that the nep count was reduced considerably.

If you are now using conventional stripping methods, our engineers will be glad to make a study of your local conditions and prepare an estimate showing you just what the Saco-Lowell Continuous Card Stripper can do for your card room.

Saco-Lowell Shops

BOSTON · MASSACHUSETTS Charlotte · Greenville · Atlanta

PROTECT THESE ROLLERS DURING IMPACT!

Here, on looms equipped with roller bearings, you need a grease that will resist rupture under high momentary pressures.

THE ANSWER is Gargoyle Grease BRB No. 3, already proved in many mills for this particular job.

During operation, this highly stable Socony-Vacuum product distributes continuously throughout the working parts of the bearing, forms a strong adhesive film that stands up under rapid impact loads. Equally important in the hot humid air of many mills, this grease gives maximum protection against rusting, resists separation and oxidation, gives long, useful service with minimum leakage.

★ ★ ★

For plain bearings, oil lubricated, your Socony-Vacuum Representative recommends the persistent films of Gargoyle Vactra Oils. Get his expert advice on the most practical lubricants for all your textile machinery for greater efficiency throughout your entire plant.

SOCONY-VACUUM OIL CO., INC.
Standard Oil of N. Y. Div. • White Star Div. • Lubrite Div. • Chicago Div. • White Eagle Div. • Wadhams Div. • Magnolia Petroleum Company • General Petroleum Corporation of California.

SOCONY-VACUUM'S 5 Steps to Lower Production Costs:

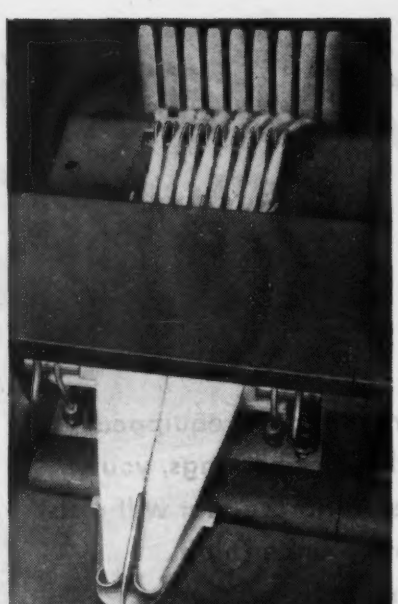
1. Lubrication Study of Your Entire Plant
2. Lubrication Schedules and Controls
3. Lubricant Storage and Handling System
4. Skilled Engineering Counsel
5. Progress Reports of Benefits Secured

GARGOYLE Lubricants

TUNE IN "INFORMATION PLEASE"—MONDAY EVENINGS, 9:30 E.W.T.—NBC

COTTON MILL MEN

"BI-COIL" Drawing is more than a new NAME — It is a new DEVELOPMENT! Why not take advantage of the savings it makes possible in your Card Room?



Close-up of "BI-COIL" trumpets

WHITIN "BI-COIL" DRAWING FRAMES

HERE ARE THE FACTS:

(1) It will give DOUBLE the production of other drawing.

(2) It requires only HALF the number of sliver cans for drawing and for the first roving process.

(3) It will save a material amount of floor space in the card room.

(4) While doubling the quantity, it will produce work of quality fully equivalent to that of other drawing.

Mill installation view of Whitin "BI-COIL" Drawing Frames.

YOU CAN MAINTAIN EQUAL PRODUCTION—*And Still . . .*

REDUCE Floor space by 50%
REDUCE Can costs by 50%
REDUCE Drawing deliveries by 50%

Compared to other drawing frames the performance of these Whitin "Bi-Coil" Drawing Frames is startling.

In addition to the savings in floor space, can costs, and number of deliveries required, they also provide easier creeling and cleaning for the operatives.

The sliver is free from twist due to an improved Can Motion and the quality of sliver is improved by the use of lower drafts.

Our sales representatives will be glad to explain to you how "Bi-Coil" Drawing can be used to advantage in your Card Room.

WHITIN MACHINE WORKS
WHITINSVILLE, MASSACHUSETTS, U. S. A.
CHARLOTTE, N. C. ATLANTA, GA.

SANDOZ PRESENTS *the color achievement of the month*

California Colors BY HOFFMAN

Mesa sands . . . highlighted with California's brilliant sunset tones of violet-blue and cyclamen . . . influenced this suavely simple out-of-doors costume created by Edith Head in Hoffman California Woolens for Betty Hutton.

Hoffman California Woolens are woven by Santa Ana Woolen Mills — Lucia skirt of solid color topped by a matching Margarita jacket — the ensemble completed by the effective self-material bag. Hoffman alone in Southern California captures the California spirit in woolens like these . . . Sandoz supplies top-ranking weavers like Santa Ana with dyes which stand color-fast in sunshine-wear.

Sandoz developments crystallized from *thinking ahead with textiles* include the Metomega Chrome colors — a full range — which have proved their true merit in the war period, especially as a time saver — boiling time is reduced by as much as 50%. Formulas can be checked after 15 minutes, speeding correct shade development.

For your convenience, Sandoz application laboratories stock acid, chrome and direct dyes and auxiliary chemicals for all natural and synthetic fibres. They are located in: New York, Boston, Philadelphia, Los Angeles, Charlotte, Toronto. Other branches: Chicago, Paterson, and Providence.

Another color achievement by a Sandoz customer will be saluted next month. It may suggest a Sandoz use by *you*.

SANDOZ CHEMICAL WORKS, INC., 61 VAN DAM STREET, NEW YORK 13, N.Y.

SANDOZ *thinks ahead with textiles*

S SANDOZ

PERKINS AUTOMATIC BIN PILERS

PATENTED

You cannot afford to pile by hand

B. F. PERKINS & SON, INC.

ENGINEERS AND MANUFACTURERS

HOLYOKE • • • MASSACHUSETTS

WAX MAKES THE DIFFERENCE

in this new PATENTED *maintenance finish!*

Get ready! We're a little short of materials right now—because a big percentage of them is going to war. But as soon as conditions permit, this wax-impregnated maintenance finish will be available for you — so get the important facts now!

4 ***extra*** ***advantages for your walls with***

JOHNSON'S WAX-FORTIFIED INTERIOR FINISH

1. *Rich, lustrous beauty* that only wax-fortification can give.

3. *Easier cleaning,* when finally necessary, because of the wax. Film retains its rich glow for the life of the finish. Resists caustic cleansers.

2. *Decorating cycle lengthened,* because this patented finish lasts longer. Remarkable durability resists stains and mars . . . repels dirt.

4. *High light reflection longer — better light diffusion.* Satin-smooth finish — no harsh glare. Easier on the eyes.

Cut maintenance costs — and have exceptionally fine-appearing walls with Johnson's new Wax-Fortified Interior Finish. This patented finish (which will be available in white and a variety of colors) is impregnated with evenly distributed wax — to give your walls a lustrous, satin-smooth surface with great dirt and wear resistance. It's amazingly easy to clean, too.

Simple to apply

No special preparation is necessary. And, as for application — you'll find it handles easier than ordinary paints because of the lubricating power of the wax. Also it gives broad coverage with great hiding power for marred surfaces—a true economy feature.

No repainting worries

When it finally becomes necessary to repaint, no special cleaning is required. The new coat of Johnson's Wax-Fortified Interior Finish or of regular paint will adhere easily — for the wax in no way interferes.

The versatility and special advantages of Johnson's Wax-Fortified Interior Finish make it uniquely suited to the needs of schools, hospitals, restaurants, food plants, bakeries, dairies, factories, office buildings and department stores. Complete information is yours for the asking — fill out and mail the coupon today!

Send for colorful, informative booklet, TODAY

Made by the makers of JOHNSON'S WAX

A NAME *EVERYONE* KNOWS

S. C. Johnson & Son, Inc., Racine, Wisconsin

Buy and hold MORE War Bonds!

S. C. Johnson & Son, Inc., *Dept.* T-95
Maintenance Products Dept., Racine, Wisconsin

Gentlemen: I would like to know what "Wax-Fortified" can do for my walls. Please send "What's Ahead in Paints" brochure.

Name _____

Address _____

Business or institution _____

NARCO

NORTH AMERICAN RAYON

These trade-marks identify rayon yarns made by North American. In the fashion world they are symbols of SMARTNESS... in the apparel industry, they are symbols of SERVICEABILITY ...in the heavy-duty fabric and industrial fields they are symbols of STRENGTH, RESISTANCE TO HEAT, FRICTION, and STRAIN.

NORTH AMERICAN RAYON CORPORATION

261 Fifth Avenue • New York, N. Y.

NORTH AMERICAN

RAYON

NOW AVAILABLE!

Dayton Reversible Drop Box Picker with 3-Point Density Control

DAYTON
THOROBRED
1 IT'S HARD HERE
Composition bearing inside spindle hole prevents wear —requires no lubrication
2 IT'S SOFT HERE
Cushions terrific impact of picker stick
3 IT'S SOFTER HERE
Prevents shuttle point loosening

Now available to the entire textile industry! The Dayton Reversible Drop Box Picker is *engineered* for longer life and improved performance through its exclusive "3-Point Density Control."

It's the result of Dayton's long experience in building products for the textile industry—plus tremendously accelerated improvements in synthetics. For while many products traditionally used for picker construction have *depreciated* during war time, Dayton Synthetics have been *improved* to a new all-time peak of perfection.

Put this vast improvement in material and design to work in your mill. Write Dayton today.

THE DAYTON RUBBER MANUFACTURING COMPANY
Famous Dayco Synthetic Rubber Products Since 1934
DAYTON 1, OHIO **WAYNESVILLE, N. C.**
Main Sales Office: Woodside Building, Greenville, S. C.

Reduce shuttle costs. Keep their shape and "stay put" on the stick. Approximately twice as strong as other types. Easier to install. Built with same precision and skill as reversible type picker.

Pickers by

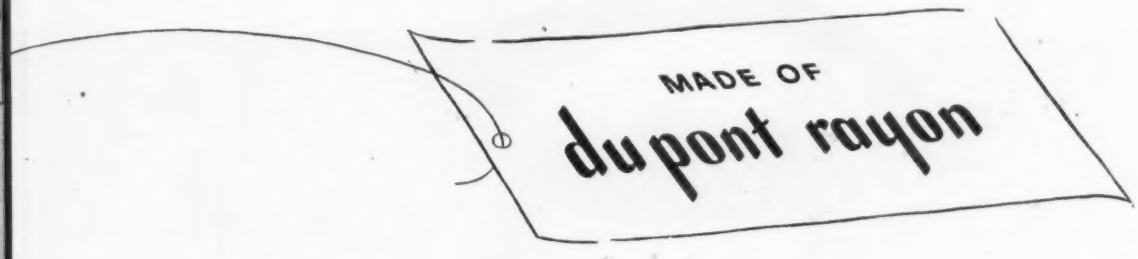
Dayton Rubber

THE MARK OF TECHNICAL EXCELLENCE IN SYNTHETIC RUBBER

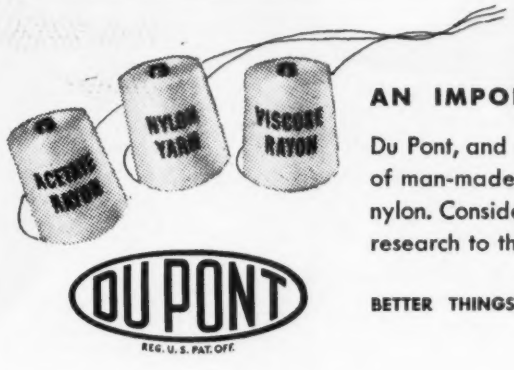
This tag ties

fabrics and fashions

to a believing audience



There are two angles to keeping topside in fabric prestige. Style comes first. That's your stopper. Quality confidence comes second. That makes your style story stick and grow famous. In yard goods, why not say quality the quick way? When you say rayon.....say Du Pont Rayon. In ready-to-wear, urge the manufacturer to do the same.



AN IMPORTANT DU PONT ADVANTAGE!

Du Pont, and only Du Pont, makes all three major classes of man-made yarns...viscose rayon, acetate rayon, and nylon. Consider the many advantages of this three fiber research to the improved fabrics of the future.

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

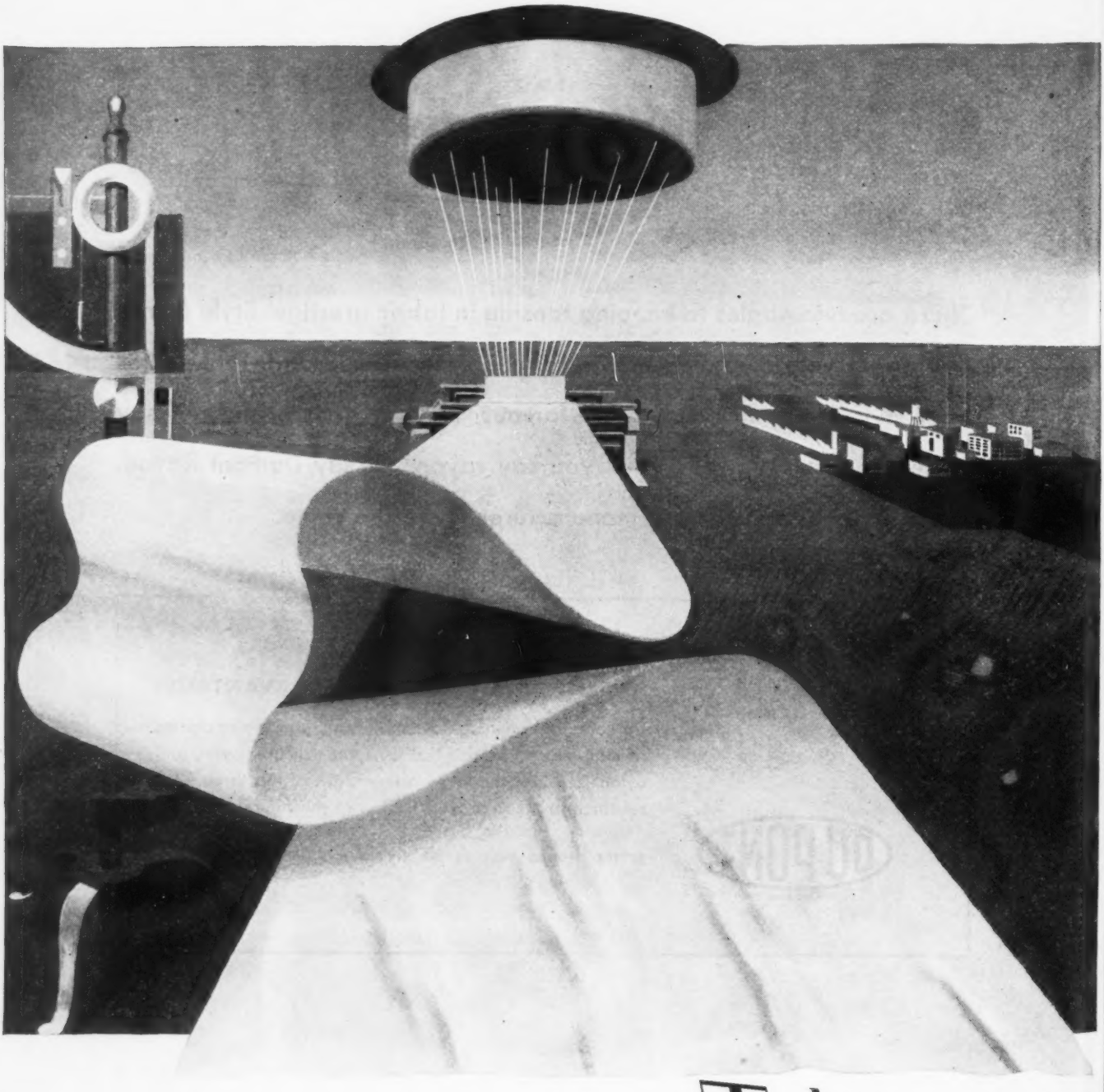
RAYON DIVISION, E. I. DU PONT DE NEMOURS & CO. (INC.), WILMINGTON 98, DEL.

RAYON: PEACETIME PRODIGAL

The wartime record of rayon has been a remarkable one, beyond all doubt.

But rayon is essentially a constructive not a destructive force. We can expect that its greatest fruits will be borne in the peaceful times to come.

Directly, as a product used in fashion, industry, house furnishings—indirectly, as a creator of capital, employer of labor, supporter of allied business, rayon has become an integral part of our lives.



TUBIZE RAYON CORPORATION · 2 PARK AVE., NEW YORK 16, N. Y.
Acetate and Viscose Rayon Yarns and Fabrics

Tu·bize rayon

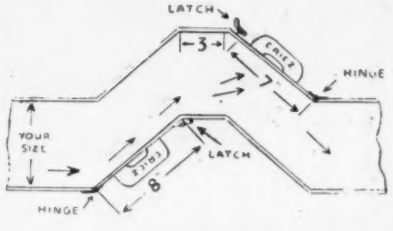
How To Clean From Textiles IN PROCESS

ERIEZ Non Electric Permanent Magnetic Separators installed in the lines of one of the leading textile mills in the country are shown above. The result of their use is also shown . . . This company (Name on request) reports an average of one pound of iron and steel trash removed from each of their lines every two weeks. Note the bale ties and tie buckles, travellers, bale strapping, cots, nails, screws, bolts, nuts, bottle caps, shown in the inset . . . The low cost of this protection will surprise you.

Fire Insurance reports show that some 76% of the fires in opener and picker rooms are caused by foreign substances. Eriez Non Electric Permanent Magnets eliminate the fire hazard from iron and steel trash . . . can be installed on any type of opener and picker room machinery and air lines of any size . . . they are sturdy and compact in design and require no wiring. Eriez Magnets are easily installed . . . Quickly and easily cleaned . . . Their first cost is their last cost. There is no operating cost whatever.

Eriez Magnets are backed by 10 year free service guarantee and thousands of them are in use in 48 states throughout North America. Such leading textile manufacturers as Pequot Mills, Mt. Vernon-Woodberry Mills, Dixie Cotton Mills, Hickory Spinners, Swift Mfg. Co., Old Colony Mfg. Co., The Dunson Mills, Lincoln Mills, Kahn Cotton Mills, Richmond Hosiery Mills, Rocky Mount Mills, Pilot Mills, California Cotton Mills, Alabama Mills, Hannah Pickett Mills, Inc., Goodyear Decatur Mills, are included in the list of Eriez Magnet users.

For further information on this low cost protection against fire and assurance that damaging iron and steel trash cannot get into your processing equipment or into your finished product, clip and mail the coupon today.



TYPICAL AIR LINE INSTALLATION

CLIP AND MAIL TODAY

For Your Copy of Bulletin 102 A

Eriez Mfg. Co., 501 E. 12th St., Erie, Pa.

Your Name_____

Address_____

City_____ State_____

Eriez (Soy EAR EEZ)

ERIEZ MANUFACTURING COMPANY

501 East 12th St. Erie, Penna.

First Major

SLASHER DRIVE IMPROVEMENT

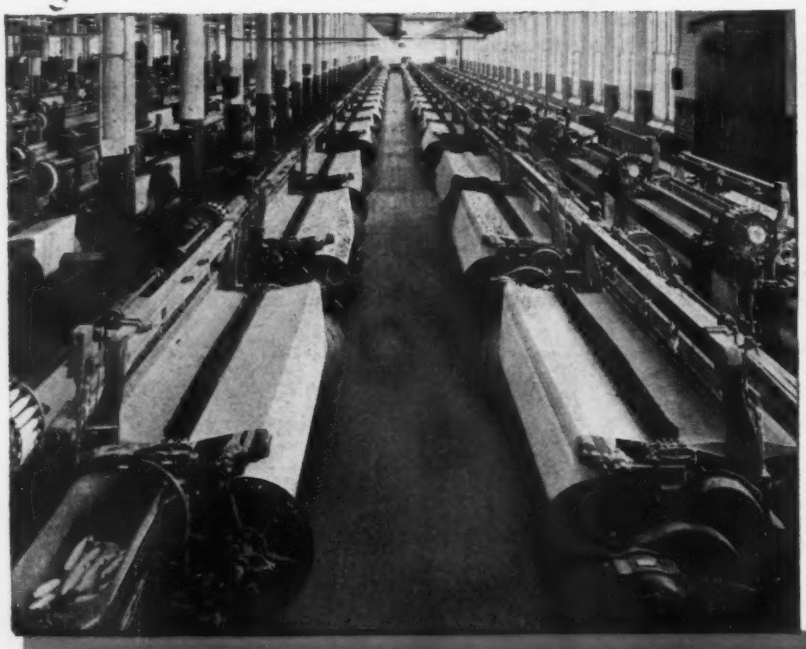
The new Westinghouse ROTOTROL-regulated Multi-Motor Slasher Drive controls tension ... improves quality ... increases production ... reduces cost.

Stop the damage to warp yarns in the slasher room and get better quality, greater production and lower costs. Even with the best care in yarn preparation, improper slashing can ruin the strongest fibers and result in off-quality cloth and lost time in the weave room.

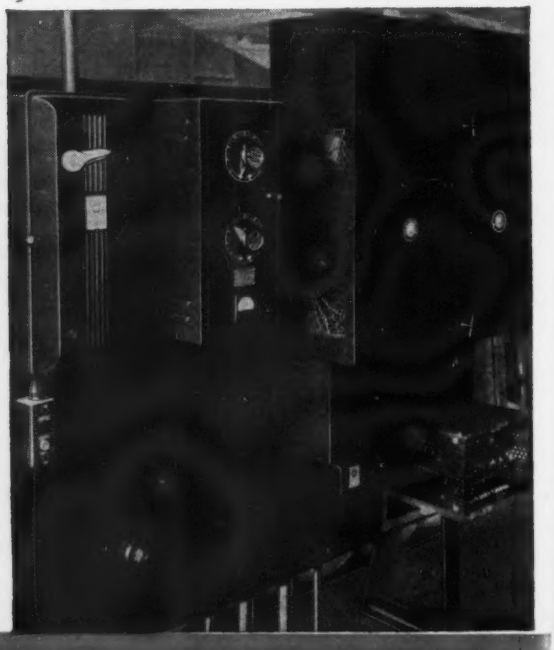
The most common cause of damage to warp yarns is the result of variations in tension. Westinghouse has made uniform tension possible with the multi-motor slasher drive through ROTOTROL tension control.

Essentially, this is a d-c adjustable voltage system, with ROTOTROL, and individual motors or gearmotors on the beam, delivery roll, cylinders and size boxes. The speed of the slasher is adjusted at a master control station. The control action of the ROTOTROL maintains the preset tension value during the beam build-up. Tension is always uniform.

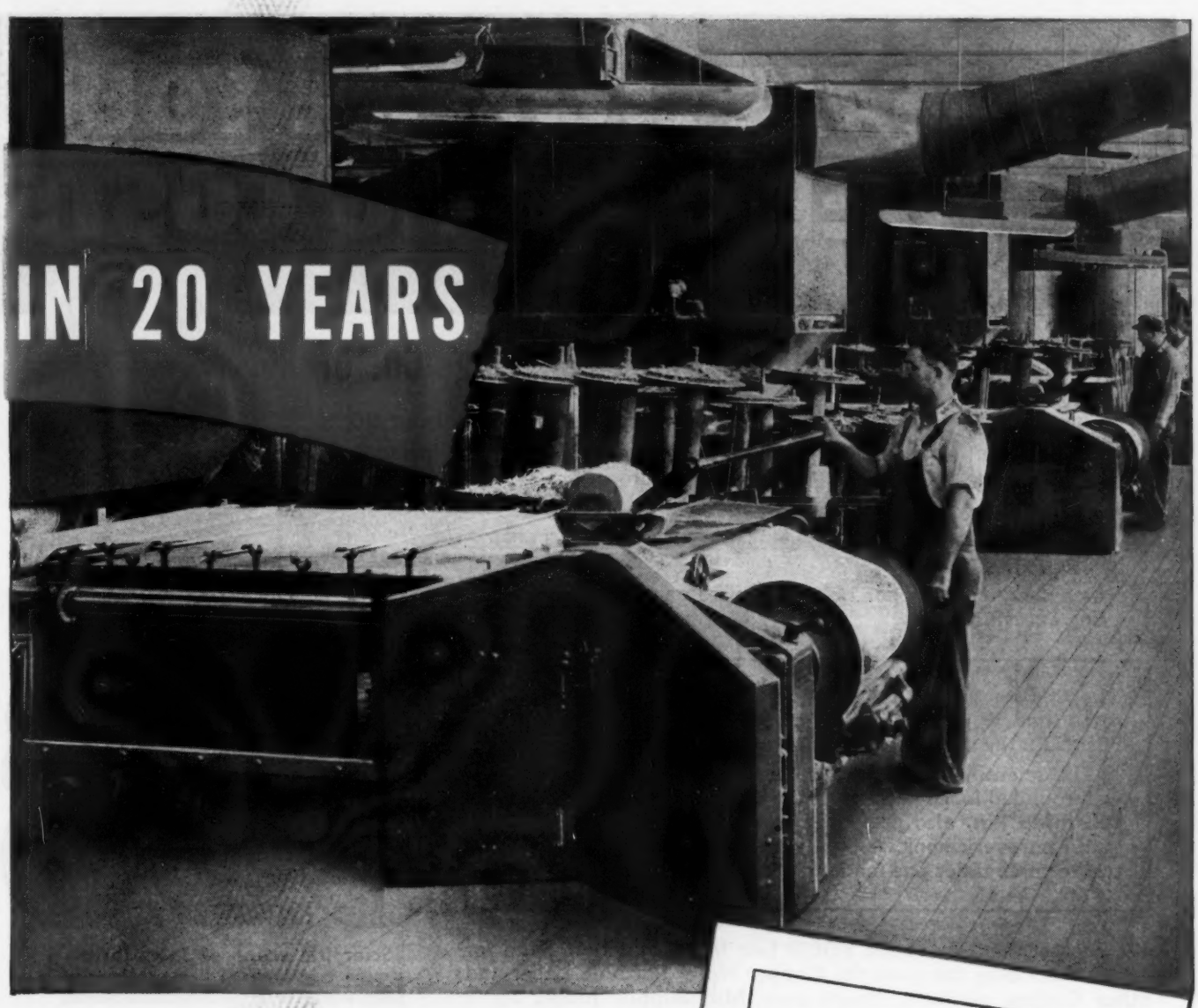
This drive has already proved its superiority in actual service. Results have been outstanding. For more information about this improved drive call your nearest Westinghouse Office or write for booklet B-3491. Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pennsylvania. J-94658



Regardless of the care taken in processing the yarn, improper slashing can ruin the strongest fibers and result in off-quality cloth and lost time in the weave room. Uniform tension obtained with the Westinghouse Multi-Motor Slasher Drive eliminates this difficulty.



Master control station for the Westinghouse Multi-Motor Slasher Drive. With ROTOTROL control there are no vibrating relays, contactors or other delicate parts requiring adjustment. After initial adjustment at time of installation, ROTOTROL requires only routine maintenance.



Battery of slashers as seen from the delivery end. Motors are mounted underneath. The ROTOTROL is mounted on a platform above the slasher.

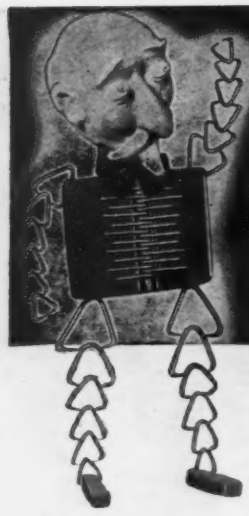
YOU CAN EXPECT THESE RESULTS WITH THE MULTI-MOTOR SLASHER DRIVE

- Uniform Yarn Tension
- Uniform Yarn Diameter
- Uniform Beam Density
- Better Filler Yarn Spacing
- Less Yarn Breakage
- More Warp on the Beam
- Fewer Stops and Adjustments
- Increased Production
- Improved Cloth Quality
- Lower Production Costs

Westinghouse

PLANTS IN 25 CITIES... OFFICES EVERYWHERE

MULTI-MOTOR SLASHER DRIVE



SAVE 30% ON YOUR BELT LACING COSTS

The Timken Roller Bearing Co. of Canton, Ohio, has effected a saving of about 30% in consumption of belt hooks by using Clipper Belt Hooks, Clipper Lubrihide Pins and Clipper Speed Lacers.

You, too, can make worth-while savings by using ALL THREE Clipper products.

Remember, only Clipper Belt Hooks are packed with the long wearing **Lubrihide Pins.**

The **Clipper No. 9 Portable Lacer** develops pressures up to 16 tons. With such pressure, hook legs can be embedded flush with the surface of any kind of belt and points clinched.

The scientific action of the jaws forms a perfect line of well rounded loops permitting the use of maximum diameter **Lubrihide Pin,** also providing equal distribution of pulling strain on every hook. A belt joint so made will outlast by two to three times one made with an old-style portable lacer.

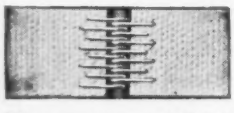
Clipper No. 9 Portable laces belts up to 6 inches wide in one quick, easy operation.

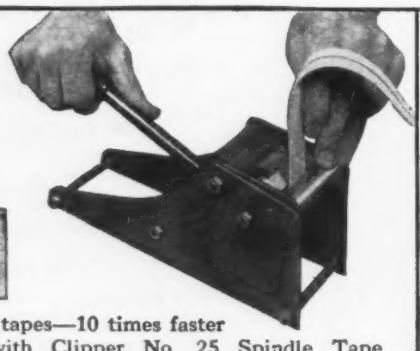
Scientific action of Jaws forms

a perfect loop for connecting pins.

We suggest that you check YOUR belt lacing situation. Send for folder describing the powerful Clipper No. 9 Portable Lacer and other Clipper products. Phone your Mill Supply Jobber for a demonstration!

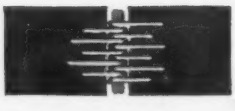
CLIPPER SPINDLE TAPE LACING EQUIPMENT

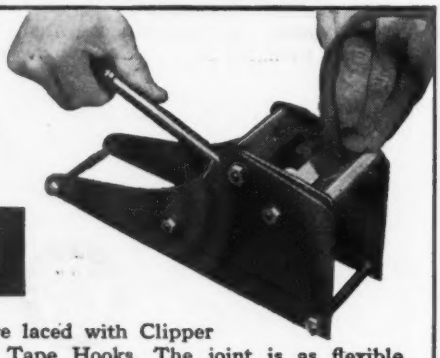




You can lace spindle tapes—10 times faster than stitching — with Clipper No. 25 Spindle Tape Hooks. The spinning frame is shut down only long enough to place the new tape on the pulleys and join the ends with the connecting pin — a short, easy operation. Tapes run true—last longer—run smoother—require less tension. VIBRATION is ELIMINATED.

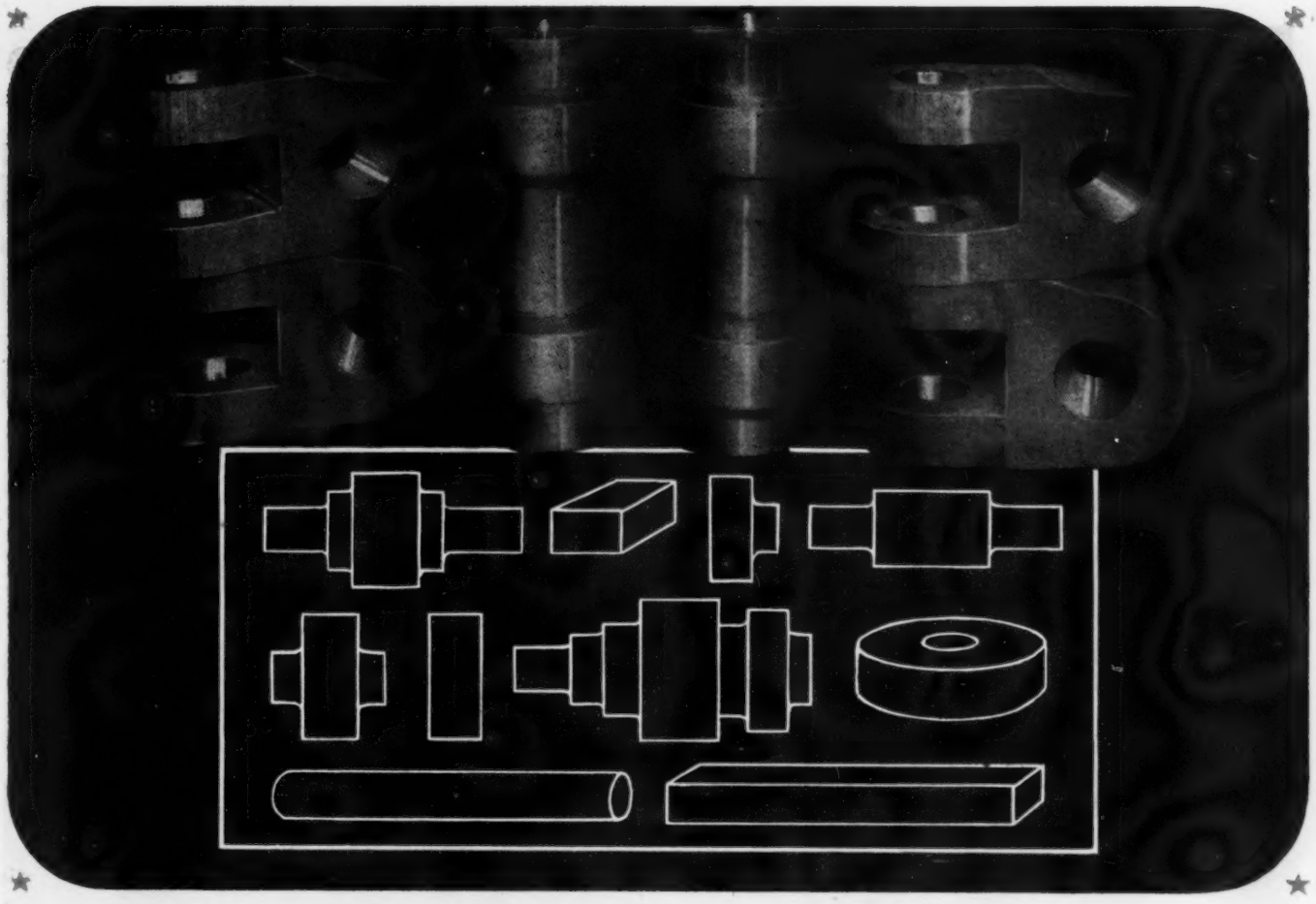
CLIPPER CONDENSER TAPE LACING EQUIPMENT





Condenser tapes are laced with Clipper No. 25 Condenser Tape Hooks. The joint is as flexible as the tape itself. Clipper Laced Condenser Tapes can be installed in a fraction of the time required for endless tapes. Tape may be purchased in the roll at considerable saving, and cut to length. WRITE FOR INFORMATION.

CLIPPER BELT LACER COMPANY GRAND RAPIDS, MICHIGAN, U. S. A.



STAINLESS STEEL FORGINGS

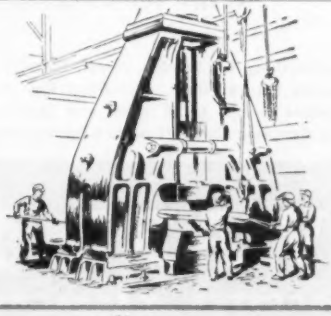
to your specifications

- **RINGS**
- **DISCS**
- **BLOCKS**
- **BARS**
- **SHAFTS**
- **SPINDLES**
- **HUBS**
- **SPECIAL SHAPES**

ROUGH MACHINING
HEAT TREATING

Any Allegheny Ludlum field representative will gladly give you further particulars, or write us direct.

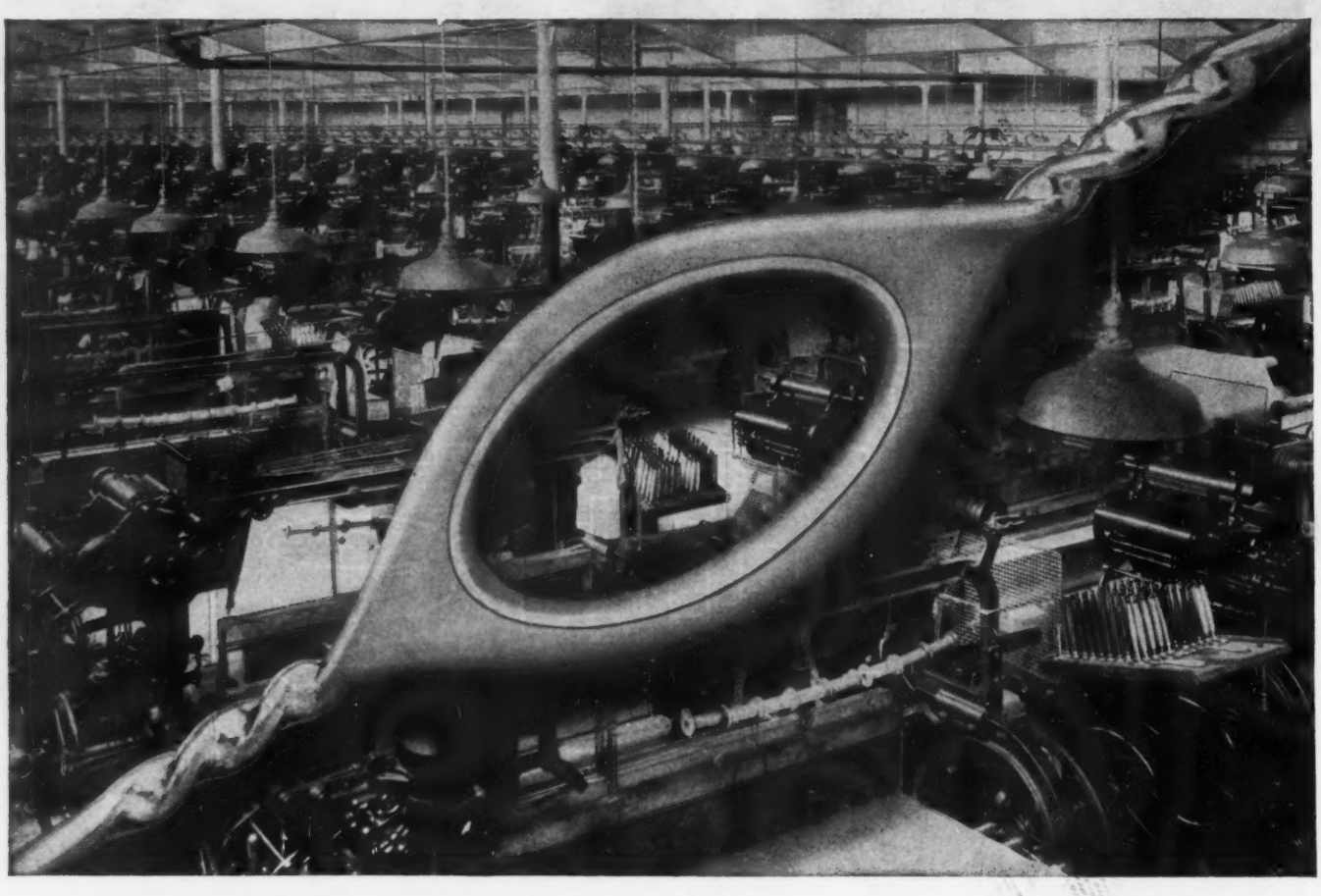
Address Dept. TW-35



W & D 9831-B

Allegheny Ludlum
STEEL CORPORATION
Forging and Casting Division
DETROIT 20, MICHIGAN

Reduce wear on Heddle and Warp



with TUFFER Inserted-eye Heddles

The TUFFER Inserted-eye—a smooth, one-piece ring of metal—resists wear and gives long, trouble-free service. Contrast this with the picture of the ordinary heddle. Notice that after a period of service grooves begin to appear which chafe the warp and cause broken ends.

Ordinary Twin Wire Heddle

TUFFER Inserted-eye Heddles give longer service and smoother operation. They are available with any size and shape of center and end eye and in any size wire.

Write for samples

Card Clothing for Woolen, Worsted, Cotton, Asbestos, and Silk Cards—Napper Clothing, Brush Clothing, Strickles, Emery Fillets Top Flats Recovered and extra sets loaned at all plants—Lickerins and Garnett Cylinders from 4 to 30 inches and Metallic Card Breasts Rewired at Southern Plant—Midgley Patented Hand Stripping Cards, Howard's Special Hand Stripping Cards and Inserted-Eye and Regular Wire Heddles.

TUFFER CARD CLOTHING

HOWARD BROS. MFG. CO.

WORCESTER, MASSACHUSETTS

Southern Plants: Atlanta, Ga. Gastonia, N. C. Branch Offices: Philadelphia, Austin Canadian Agents: Colwool Accessories, Ltd., Toronto 2

Pack to Attract

Want to prevent losses on goods in transit? Want to sell more merchandise . . . quicker, faster, more economically? Then make your corrugated boxes work for you two ways . . . protect and promote. For modern package designs and skillful package engineering . . . for corrugated packages that are "salespaks"—be sure to send for your copy of H & D's new book, "Pack to Attract." It's filled to overflowing with new packaging ideas for the post-war period.

GET 23 PACKAGING IDEAS

Make your corrugated boxes protect and promote your product. Add color and display appeal to strength and protection and you have the right combination for modern packaging. "Pack to Attract" contains 23 new packaging ideas direct from the H & D Package Laboratory. Send for your copy today.

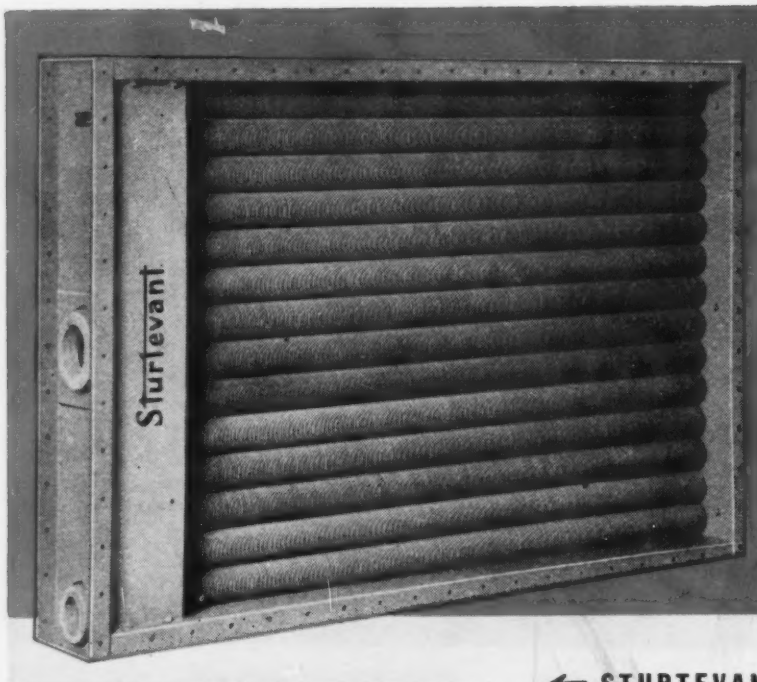
Hinde & Dauch

AUTHORITY ON PACKAGING

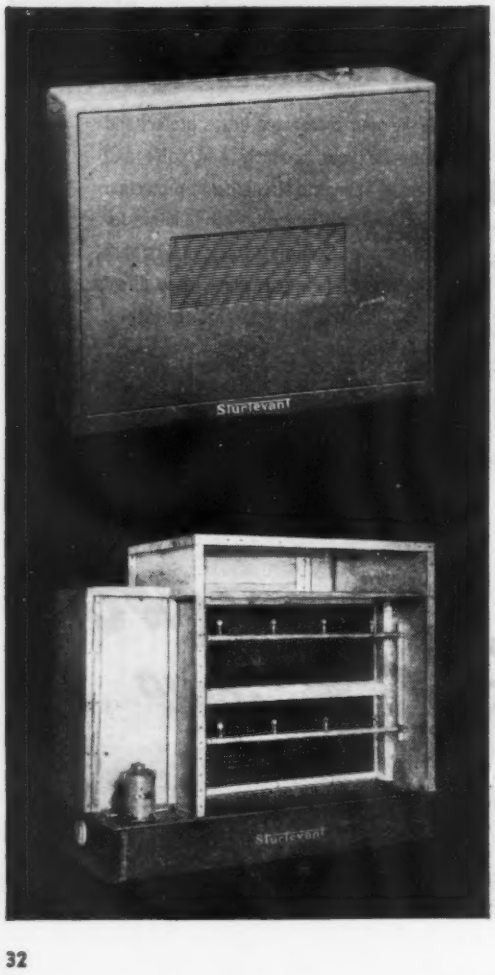
THE HINDE & DAUCH PAPER COMPANY, 4530 DECATUR STREET, SANDUSKY, OHIO

Factories in BALTIMORE • BOSTON • BUFFALO • CHICAGO • CLEVELAND • DETROIT • GLOUCESTER, N. J. HOBOKEN • KANSAS CITY • LENOIR, N. C. • MONTREAL • RICHMOND • ST. LOUIS • SANDUSKY, OHIO • TORONTO

Here's your EXTENDED SURFACE —that users spell "SERVICE"



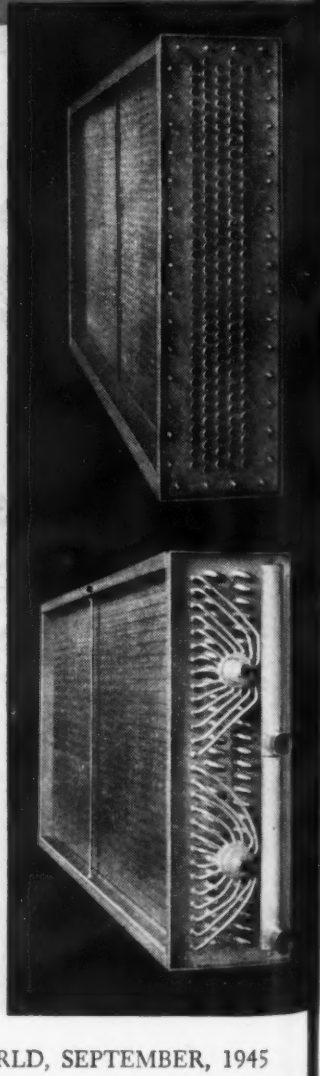
STURTEVANT HEAVY DUTY EXTENDED SURFACE HEATER is the culmination of over 75 years of experience in manufacturing blast heaters and analyzing the performance of all types of heaters. To the basic rugged construction of earlier pipe-coil heaters has been added an ingenious arrangement of tapered spiral fins. The result is high heat transfer per square foot of face area. Weight is but a fraction of pipe coil heaters. In addition there is uniform steam circulation and excellent non-freeze characteristics. Due to their rugged construction, outstanding performance and freedom from maintenance and repair, Sturtevant Heavy Duty Heaters are particularly suited to industrial heating, ventilating, air-conditioning, vapor absorption and drying applications, especially where higher steam pressures are encountered.



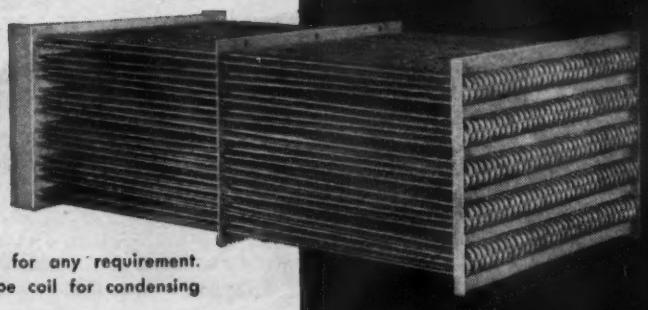
← STURTEVANT AIR BLENDERS are simple, compact units for mixing and heating conditioned air. As the name implies, they mix cold dehumidified air, or heated humidified air from a central system, with predetermined quantities of re-circulated room air, to maintain desired room temperatures both summer and winter. Operates on the ejector nozzle principle, without moving parts, under set thermostatic control. Equipped with a booster radiator coil for winter operation. Designed for free standing, or may be located in recesses under windows or behind ornamental paneling.

STURTEVANT COOLING COILS → are rugged, efficient extended surface coils of seamless copper tubes firmly expanded into plate type fins giving a permanent bond that assures unrestricted heat flow from primary to secondary surfaces. For use with water or refrigerants. Two types for chilled water:— (1) with tubes individually assembled into headers to permit cleaning of tubes (2) with continuous tubing. Used for vertical or horizontal air flow. Direct expansion coils are provided with distributing headers giving equal refrigerant distribution to all circuits.

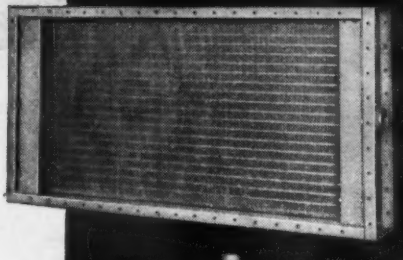
← STURTEVANT SURFACE DEHUMIDIFIERS are wet surface units, designed around Sturtevant Extended Surface Coils, for accurately controlling wet and dry bulb conditions in industrial and comfort air conditioning. Available for chilled water or directly expanded refrigerant. Spray water is directed against the coils on the air-entering side and is carried through the coils so as to wet the entire surface. This keeps the coils clean and results in practically saturated air leaving the Surface Dehumidifier.



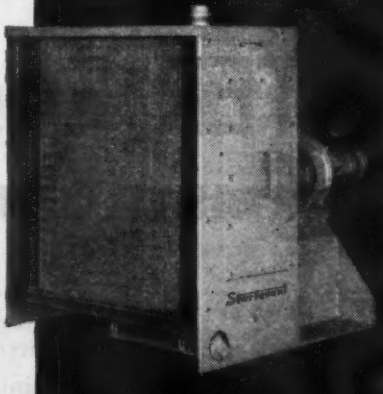
STURTEVANT PIONEERS AND LEADS in the manufacture of extended surface heating and cooling apparatus. Both in the number of types available for different kinds of service, and the various sizes in which these types are made, there is a variety of equipment to assure a "tailor-made" fit for any requirement. Shown above is an evaporative type coil for condensing refrigerant or cooling water.



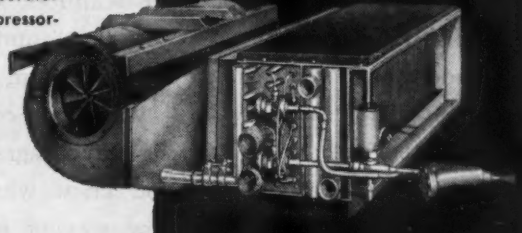
STURTEVANT PLATE FIN HEATER has earned, for many years, a reputation for long efficient service in air-conditioning, industrial and unit applications. Aluminum fins of continuous plate type allow free and uniform air flow. Tubes of seamless copper expanded into fins assure a permanent mechanical bond and unrestricted heat flow from tube to fin. Different performances are obtained by varying the fin depth in the direction of air flow. Wide variety of sizes for applications ranging from large industrial installations to small domestic units.



STURTEVANT ENGINE COOLERS, originally designed for service in the oil and natural gas fields, today are meeting a variety of cooling requirements in widely diversified industries. Unit comprises a fan, extended surface radiator and whatever auxiliary equipment is required for the specific application. Unfailing efficiency in blasting away water-jacket heat has made them preferred for cooling diesel engines, radio tubes and all types of industrial applications, such as power plants, pumping stations, ice plants, etc.



STURTEVANT RAILWAY AIR CONDITIONING utilizes three designs of units making possible nine combinations and systems:—Mechanical System with an evaporator unit located inside the car and operated with a compressor-condenser unit beneath the car. Ice System with ice bins beneath the car and water pumped through cooling coils located with fan units in upper part of car. In Spray-Type System, water sprays chilled by ice or Freon produce conditioned air as in any conventional system. In addition, sprays operate without ice or Freon to freshen cars with washed outside air by evaporative cooling.



HEATING

DRYING

VAPOR ABSORPTION

AIR CONDITIONING

VENTILATING

COOLING

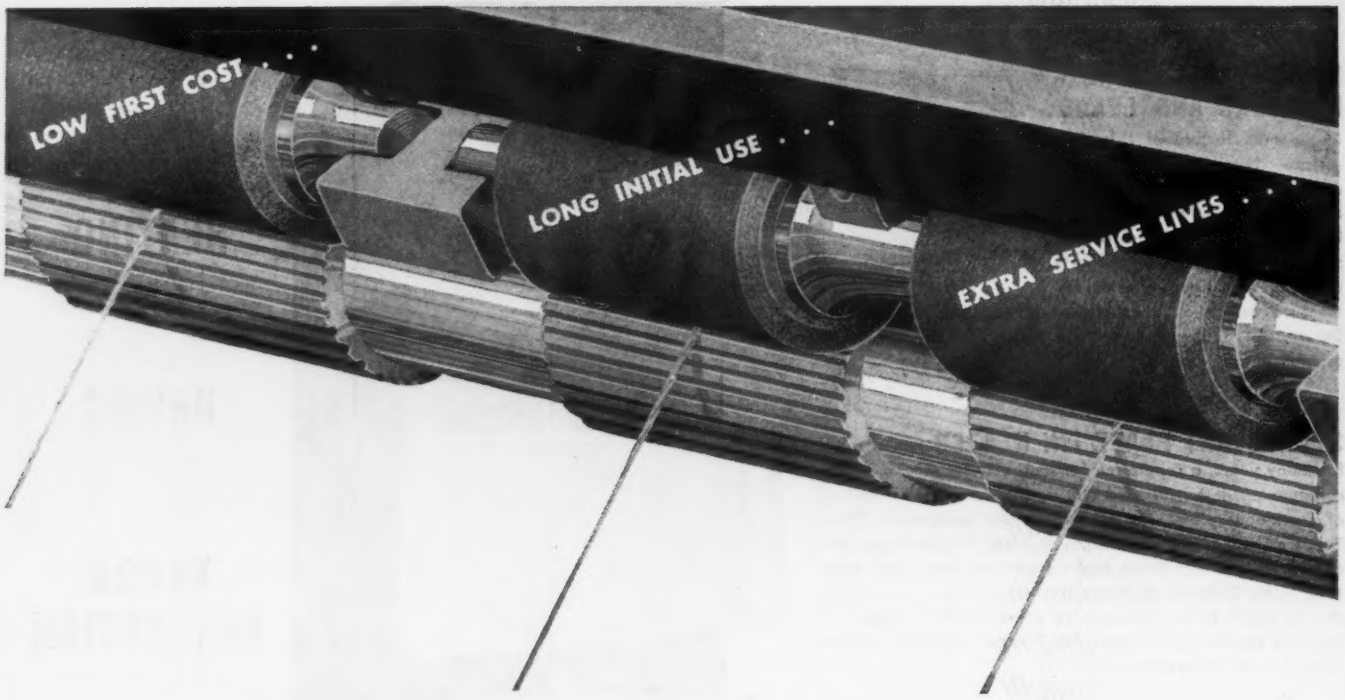
PROCESSING

EXCEPTIONAL SERVICE is the outstanding characteristic of Sturtevant Extended Surface Equipment. No wonder, when it is the product of experience—comprised of "know how" that goes back more than 75 years to the first hot blast apparatus, (U.S. Patent No. 92,490, granted to B. F. Sturtevant July 13, 1869). Whatever your problem of heating, cooling, ventilating or air-conditioning may be, there is a Sturtevant unit to exactly fit your requirements.

With Sturtevant, there's no necessity for sacrificing one desirable advantage to gain another. Your Sturtevant Engineer can help you get them all, because he is practically unlimited in his choice of tools for licking your most complex problem. As you scrutinize your operations, with an eye to what lies immediately ahead, why not plan to talk with a Sturtevant Engineer about what Extended Surface Equipment can do for you.

Sturtevant
REG. U. S. PAT. OFF.
Puts Air to Work

B. F. STURTEVANT COMPANY
Hyde Park Boston 36, Mass.



GREATER ECONOMY

. . . with ARMSTRONG'S CORK COTS .

ECONOMY-MINDED mill men appreciate the cost advantages of Armstrong's Cork Cots. Besides being low in first cost, their toughness and durability give you a long initial service life. Then these superior roll coverings can be rebuffed, made like new, three or four times . . . for a total of four to five full-length service lives. And each rebuffing costs as little as ½¢ per roll.

Armstrong's Cork Cots not only provide extra-long, economical service, but also help spin stronger, more uniform yarn. Their high coefficient of friction *eliminates* eyebrowing and minimizes clearer waste. They draft uniformly and with a minimum of slippage. The yarn they produce is clean and even. Furthermore, these cots reduce end breakage and minimize top roll lapping. And because they are seamless, resist "hollowing out," and do not "flow" under pressure, Armstrong's Cork Cots maintain a true drafting surface.

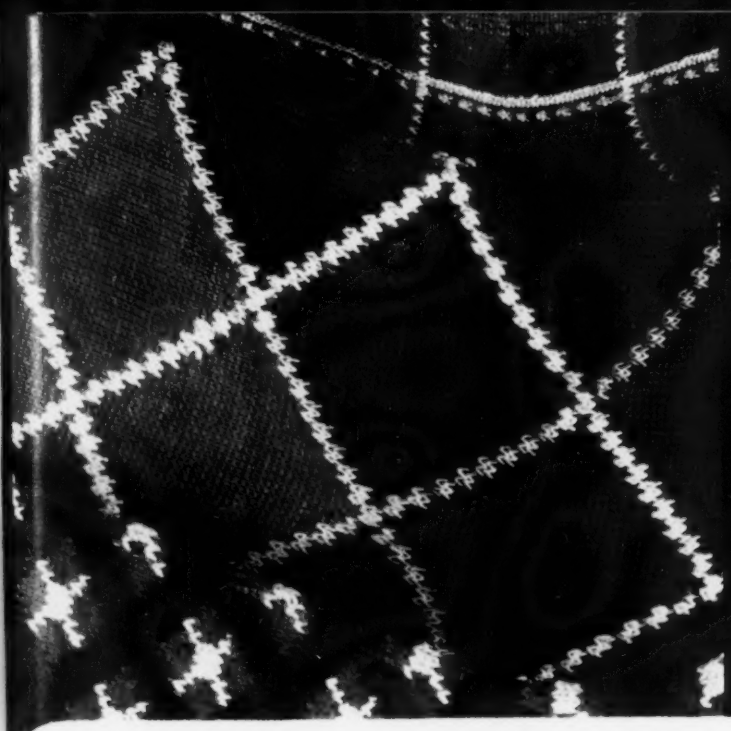
When you consider their important operating advantages with their greater economy, you know why Armstrong's Cork Cots are now serving more spindles than any other roll covering. For complete, helpful information, see your Armstrong representative. Or write direct to Armstrong Cork Company, Textile Products Department, 8309 Arch Street, Lancaster, Penna.

BETTER RUNNING WORK

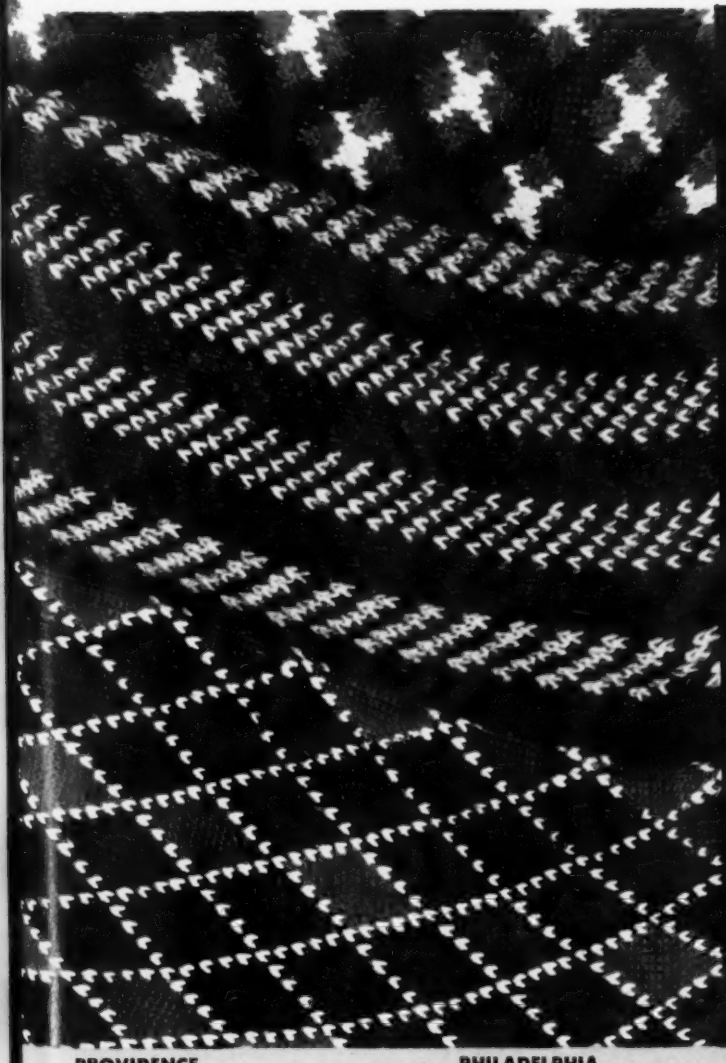
— MORE POUNDAGE

ARMSTRONG'S CORK COTS

ACCOTEX COTS • ACCOTEX APRONS



COLOR . . . the Master Salesman



The eighth sin (in the textile industry) is to produce a fabric that can not be distinguished from competitive fabrics; and the penalties are automatic — price competition; no profits.

To avoid this pitfall, use "Color — The Master Salesman." Make well-designed yarn dyed fabrics. Not only do colored yarns lift your merchandise above price competition; they also serve as an inseparable hallmark of quality . . . defy cheap imitation.

With 35 years of experience and with 4 yarn dyeing plants, Franklin Process is in an unique position to assist designers in the selection of colors and to help mills to run colored yarns with maximum profit. Our yarn department can also render invaluable service.

The time is not distant when you will need Color — the Master Salesman. Why not put him on your payroll NOW?

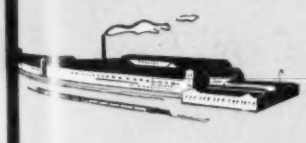
Franklin Process

LARGEST PACKAGE DYERS IN THE WORLD

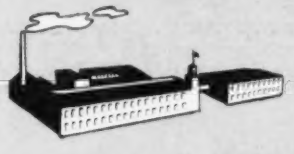
Chicago Representative, 100 West Monroe Street

New York Representative, 40 Worth Street

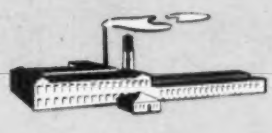
PROVIDENCE



PHILADELPHIA

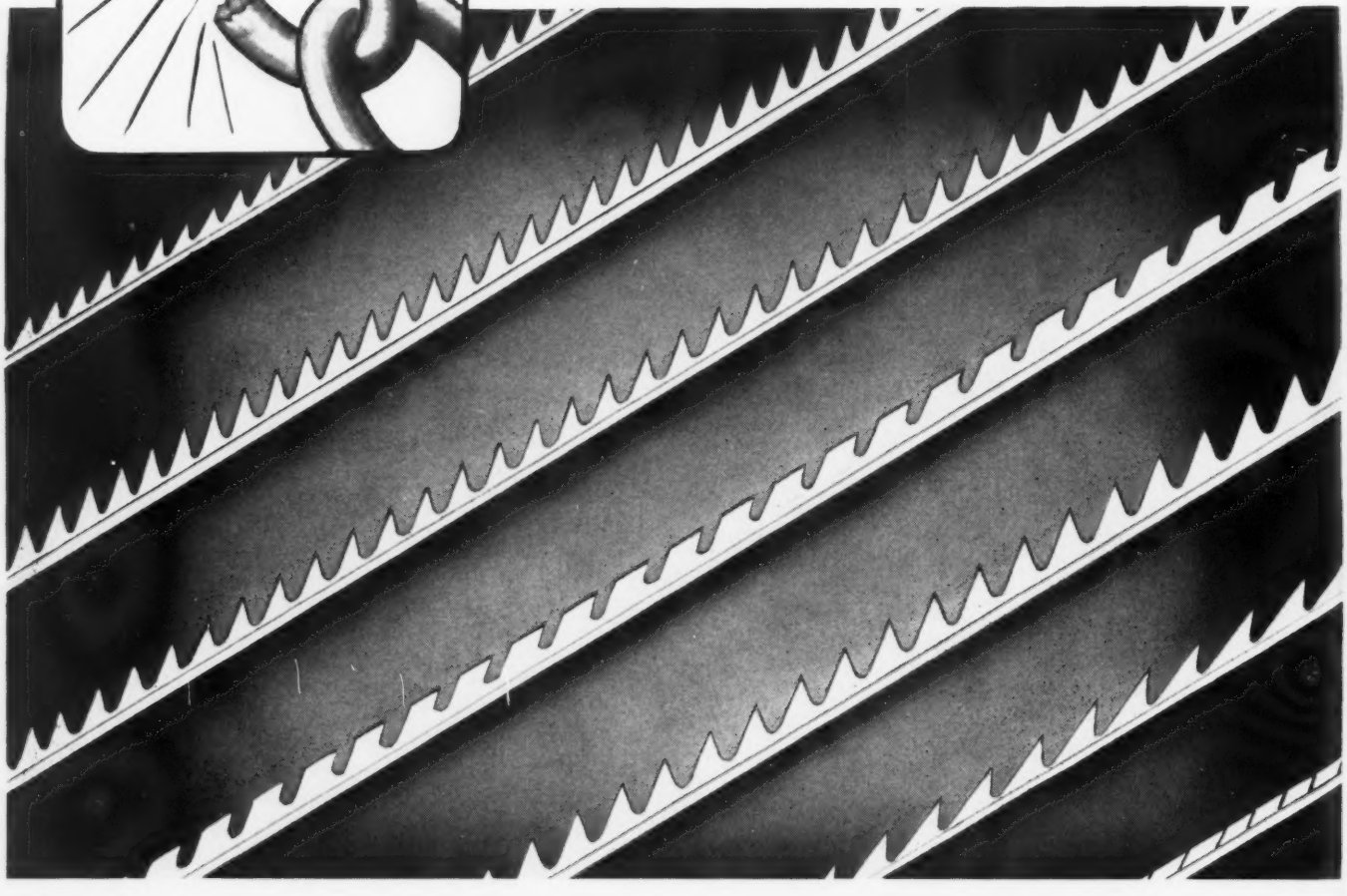


GREENVILLE



CHATTANOOGA

ARE THERE "WEAK LINKS" IN YOUR CARDING PROCESS?



ONE weak link makes an entire chain useless, no matter how strong the other links are. Likewise, poor wire on the feed end of a card will destroy the overall efficiency of the latter, no matter how good the other clothing elements may be.

Long experience has enabled us to develop a complete line of metallic wires for the feed end of the card and for other places where they are required. We can also assist in selecting the best type of wire for a particular operation.

Tell us your card clothing problem.

ASHWORTH BROS., INC.

AMERICAN CARD CLOTHING CO. (Woolen Div.)

Fall River*†‡ Worcester*‡ Philadelphia*†‡ Atlanta†‡
Greenville†‡ Charlotte†‡ Dallas†‡ (Textile Sply. Co.)

*Factory †Repair Shop ‡Distributing Point

PRODUCTS AND SERVICES

CARD CLOTHING FOR COTTON, WOOL, WORSTED, SILK, RAYON AND ASBESTOS CARDS AND FOR ALL TYPES OF NAPPING MACHINERY • BRUSHER CLOTHING AND CARD CLOTHING FOR SPECIAL PURPOSES • LICKERIN WIRE AND GARNET WIRE • SOLE DISTRIBUTORS FOR PLATT'S METALLIC WIRE • LICKERINS AND TOP FLATS RECLOTHED • • • • • • • •

Ashworth PIONEERS IN CARD CLOTHING

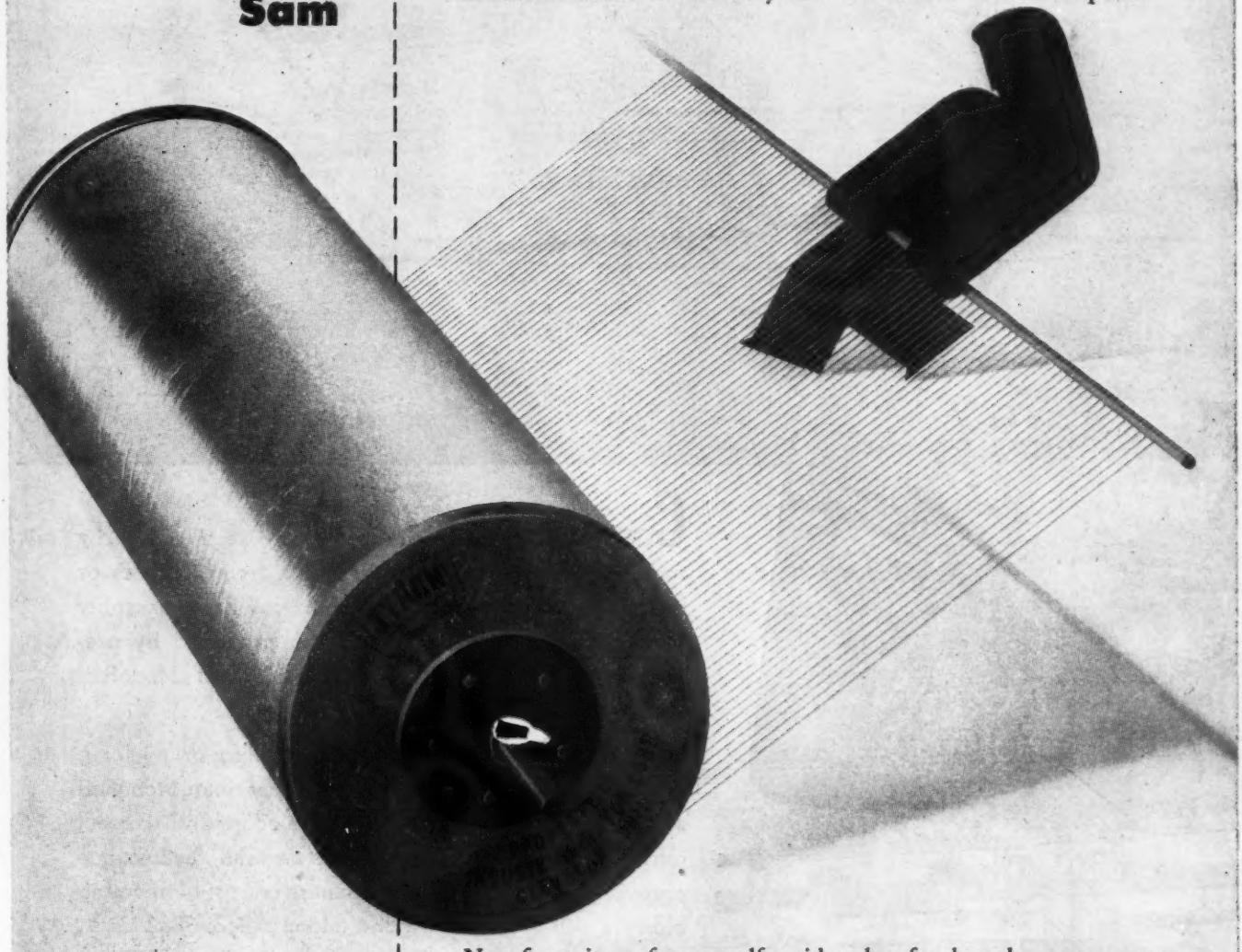
3 FACTORIES • • • 6 REPAIR SHOPS • • • 7 DISTRIBUTING POINTS

On the beam for Uncle Sam

"Weave tire cord fabric from beams?" "Totally unorthodox," said the experts. But unorthodox approaches to manufacturing methods are all in the day's work to Industrial engineers and technicians, particularly when a better product or better process is in sight.

The classic example is, of course, the revolutionary "CONTINUOUS PROCESS" of producing viscose rayon. REEL SLASHING, *LEKTROSETTING and UP-TWISTING are others. Now you can add MULTIPLE-BEAM WEAVING of tire cord fabric to this growing list.

By this method we feed our Tyron cord from several beams directly into the looms. The orthodox way is to weave from thousands of spools.



Now figure it out for yourself—with only a few huge beams to worry about, it is far easier to equalize tension from these few feeding points than from thousands, and thereby to produce a more uniform Tyron fabric. There's the better product, thanks to the better process.

Thus, MULTIPLE-BEAM WEAVING takes its place with other new chemical, mechanical and textile achievements that Industrial has made to meet the demands of war for tire yarn, cord and fabric. In peace time the same ingenuity that produced them will be at your disposal.

It's called **MULTIPLE BEAM WEAVING**

Remember it!

Industrial RAYON CORPORATION
CLEVELAND, OHIO
NEW YORK OFFICE: 500 FIFTH AVE

MAKERS OF

*Spun-lo RAYON YARN AND CLOTH and *TYRON YARN, CORD AND FABRIC

*Reg. U.S. Pat. Off.

GET *Cleaner Yarn* WITH AMERICAN MONORAIL AUTOMATIC CLEANERS

CONTINUOUS production of clean yarn ordinarily requires countless hours of attention from spinners or special cleaning crews. These hours can be measurably reduced and a much cleaner yarn produced by preventing lint accumulation with American MonoRail Automatic Cleaners.

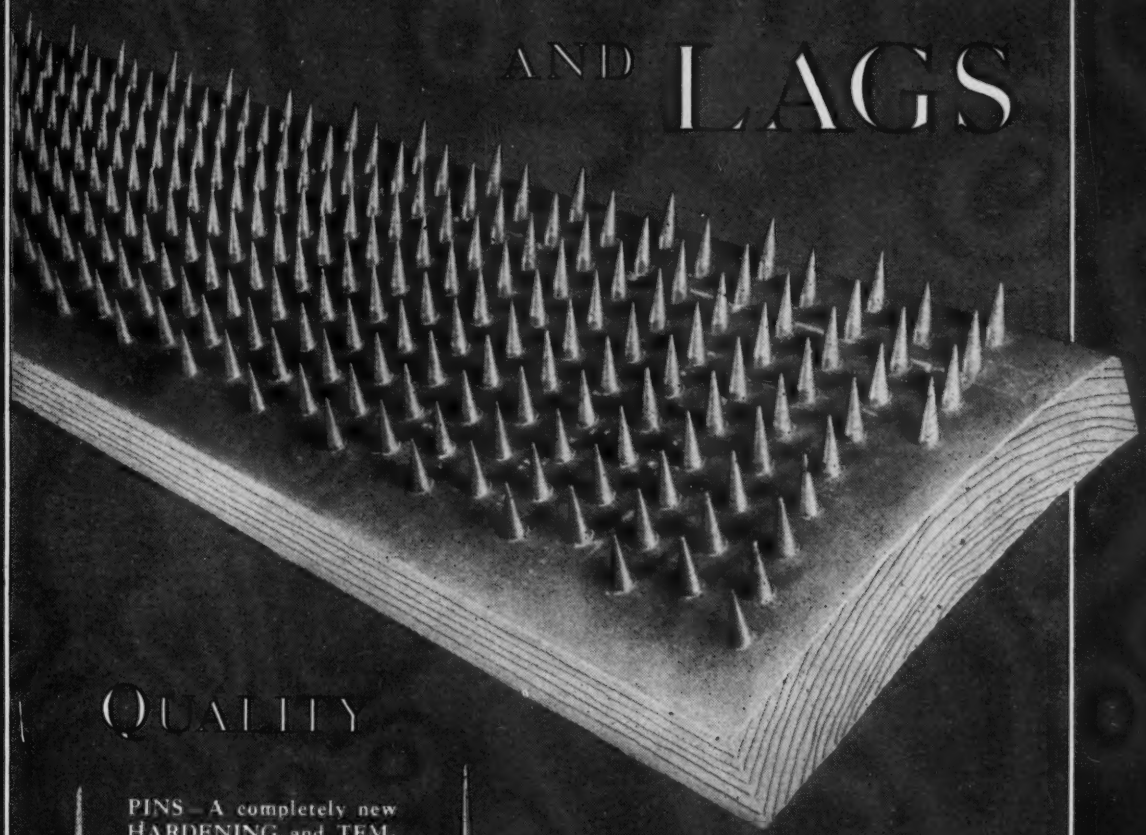
Efficient cleaning comes from a swirling or cyclonic action of air currents produced by American MonoRail Automatic Cleaners. A proper velocity and correct current do the cleaning without harmful disturbance of roving or yarn. Cyclonic Cleaners consist of traveling blowers, self-propelled around a loop of MonoRail track. One fan sets up the cyclonic currents directed down and around the machines, while another fan sends a column of air directly against the ceiling.

Let an experienced American MonoRail engineer tell the complete story of Controlled Cyclonic Cleaning for spinning, winding, twisting and warping operations. Write for new 24-page book explaining cost saving advantage.

THE AMERICAN MONORAIL CO.

13108 ATHENS AVE. CLEVELAND 7, OHIO

PINS AND LAGS



QUALITY

PINS—A completely new HARDENING and TEMPERING Department insures lasting quality and uniformity in the pins. We manufacture in any type, size or quantity.

LAGS—Kiln dried Rock Maple with every shipment tested to insure long life and no splitting. Lags of every type for every purpose are available.

SERVICE—To make immediate shipments, we carry in stock many items. Write us for quotations.

OUR PRODUCTS ARE GUARANTEED

Needle Pointed Goods

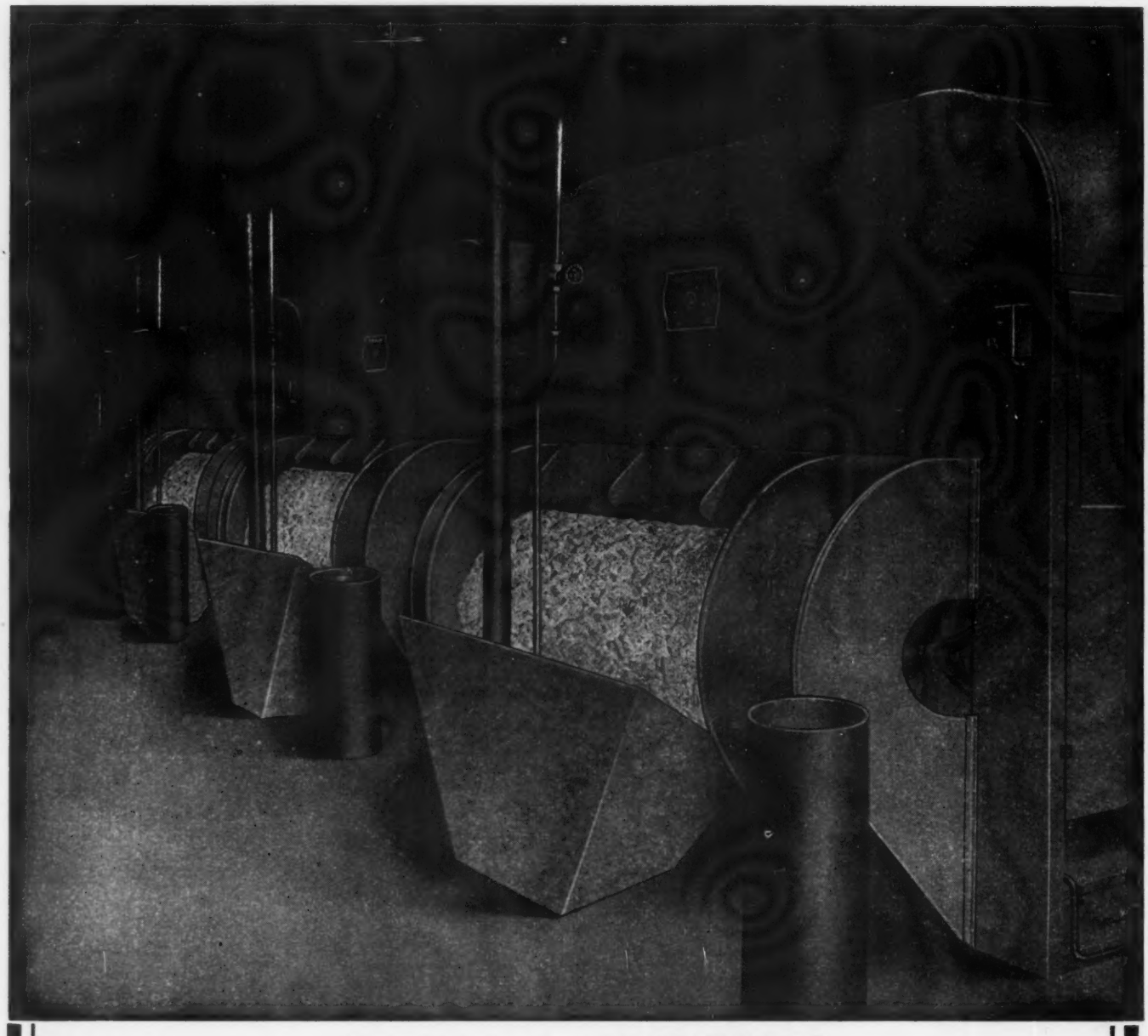
- Card Pins
- Cordage Pins
- Comb Pins
- Faller Pins
- Gill Pins
- Hackel Pins
- Picker Pins
- Picker Teeth
- Waste Machine Pins
- Doffer Teeth
- Shoddy Picker Teeth
- Wood Pulp Teeth

- Breaker Lag
- Main Cylinder Lag
- Carding Beater Lag
- Cotton Picker Lag
- Doffer Lag
- Worker Lag
- Steel-Faced Rag or Shoddy Picker Lag
- Stripper Lag

75TH ANNIVERSARY

WILLIAM CRABB & CO.

301 THIRD AVE., NEWARK 7, N. J.



A Recent Installation of Four SARGENT STOCK DRYERS
in a Progressive New England Worsted Mill

A Production Problem Solved -

• • • THIS IS THE IMPORTANT FACT!

Advantages of this modern installation

— Stock dried at lower temperatures — The use of low pressure steam
— Lower power consumption — Less floor space required
— Costly repairs and breakdowns eliminated — A better product

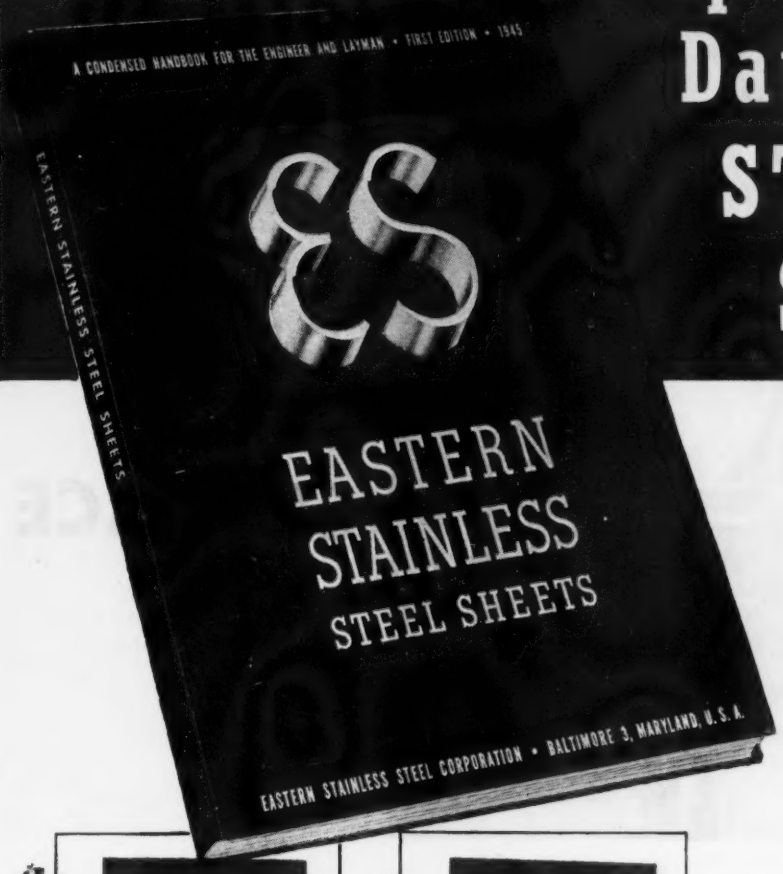
Why not let SARGENT solve your Drying troubles ?

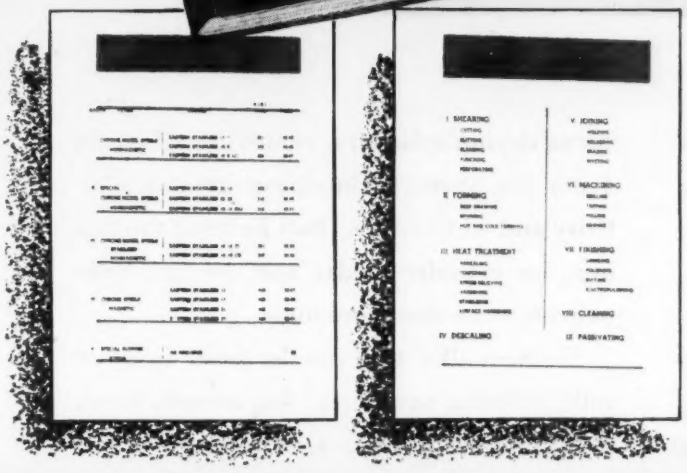
Important Defense Items by SARGENT	Machines for Smokeless Powder Plants • Machines for Synthetic Rubber Plants • Textile Machinery for the manufacture of uniforms • Machined parts for large caliber guns

C. G. SARGENT'S SONS CORPORATION

Graniteville, Massachusetts, U.S.A.

It's Here! THE NEW Up-to-the-Minute Data Book on STAINLESS STEELS!


A CONDENSED HANDBOOK FOR THE ENGINEER AND LAYMAN • FIRST EDITION • 1945
EASTERN STAINLESS STEEL SHEETS
EASTERN STAINLESS STEEL SHEETS
EASTERN STAINLESS STEEL CORPORATION • BALTIMORE 3, MARYLAND, U. S. A.



Authentic Technical data
Complete Product listings
Well-organized facts
Illustrated Applications—
(including your own industry)

Yes, here it all is—everything you want to know on stainless steels—in one skillfully-condensed 96-page FREE manual! Sparkling illustrations bring the points home . . . right into your own industry.

You'll find this new hot-off-the-press Eastern Catalog a handy assistant. Get one *today*—and keep it right on your desk. A coupon is placed below for your convenience in writing for it. Remember — it's free — and there's no obligation whatsoever.

These two sub-indices give you an idea of what it will be worth to you to have this book handy on your desk. Have you ever seen any compilation of facts on stainless steel so *complete* —so well-organized?

ask **EASTERN** *for the answer*
when **STAINLESS** *is the question*

JML Co B-J2

EASTERN STAINLESS STEEL CORPORATION
Baltimore 3, Maryland Dept. 52

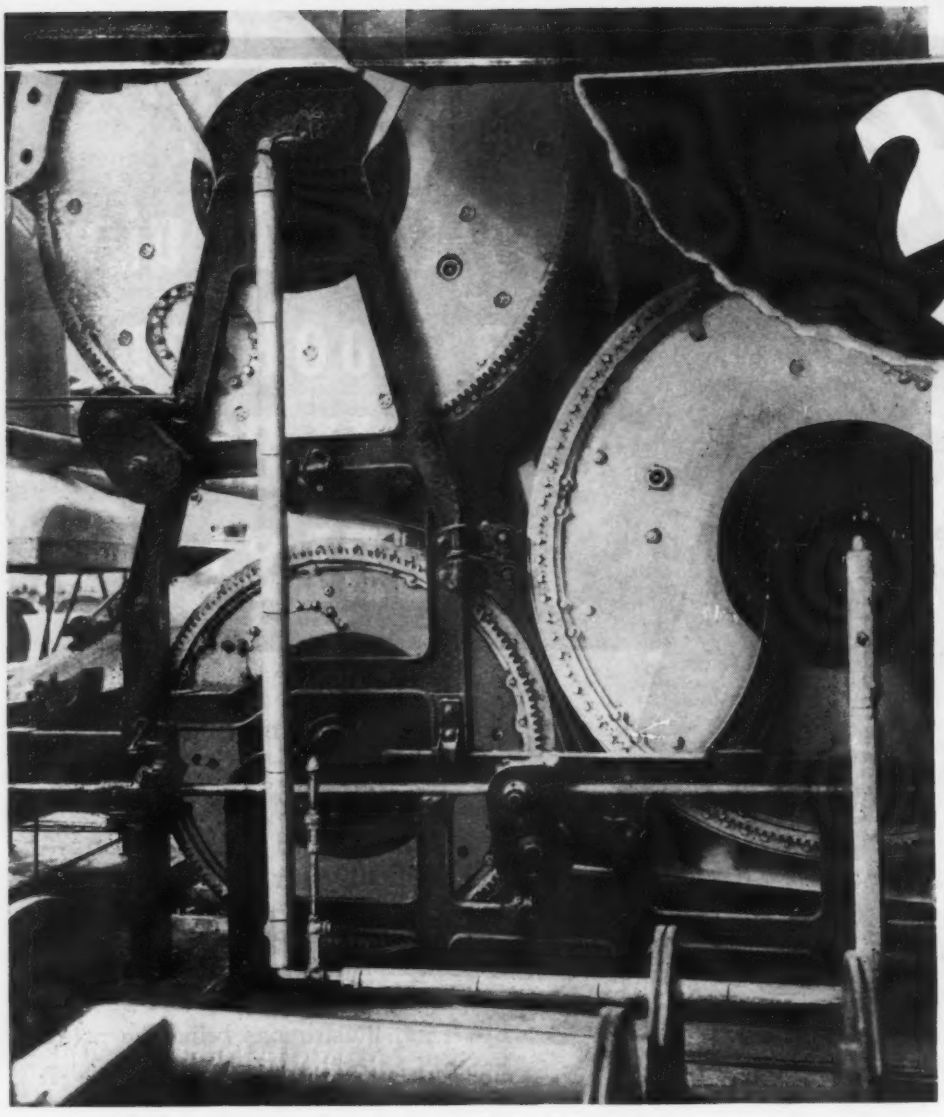
Gentlemen: Please send me a free copy of your valuable new 96 page catalog.

Firm Name .....

Address .....

City ..... Zone ..... State .....

Your Name and Title .....



2/3 GREATER DRYING SURFACE

This modern slasher, utilizing two 7′ and one 5′ cylinders actually increases drying surface by more than 2/3! Production, depending upon several factors, is frequently increased by more than 50%.

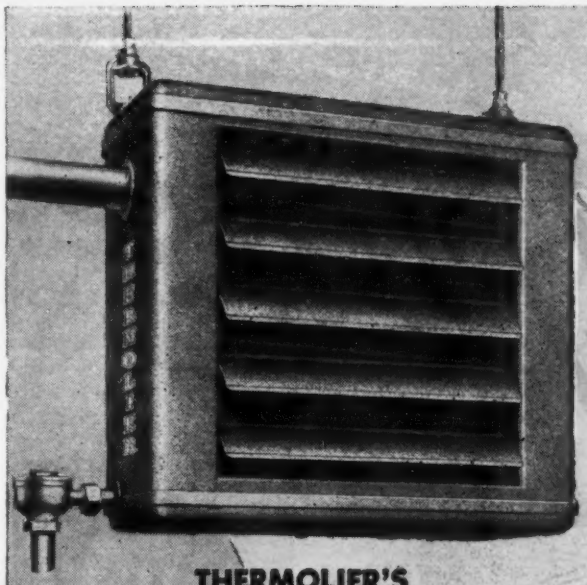
The extra cylinder is only one feature of the complete assembly. Specially designed contact rolls further increase drying surface by increasing the contact of the warp with each cylinder. The positive drive turns drying cylinders, removing all strain from the yarn, maintaining greater elasticity and uniformity. Ball bearing mountings on cylinder shafts and contact rolls provide smoother operation.

Slashers like this can be built in your mill, utilizing equipment you already have, at a minimum cost. Let us supply you recommendations and estimates — without obligation. Write or telephone — today.

WEST POINT FOUNDRY & MACHINE CO.

(Batson-Cook Company, Owners)

WEST POINT, GEORGIA



THERMOLIERS *are back again!*

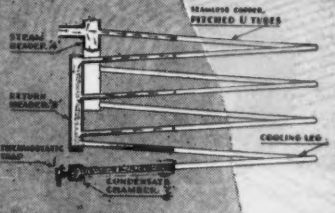
Now is the time to do something about your unsatisfactory heating equipment, before last winter's headaches are repeated.

Here's good news for you. GRINNELL is making THERMOLIERS again. They are the same efficient, engineered unit heaters that have been delivering more heat at less cost for thousands of satisfied customers for years.

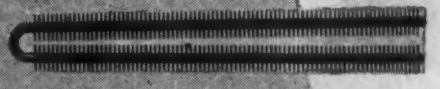
Talk over your heating problems with a Grinnell Engineer. He'll show you how Thermoliers distribute heat uniformly to every square foot of your buildings, improve employee morale and output and save up to 27% of still-scarce fuel.

Thermoliers' 12 points of superiority make them the logical choice in unit heaters. Ask for the new Grinnell Thermolier catalog 6-E. It gives all the details of construction, application, capacities and installation. Grinnell Company, Inc., Executive Offices, Providence 1, R. I. Branch offices in principal cities.

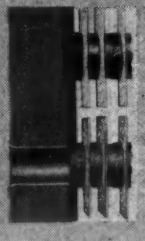
THERMOLIER'S SUPERIOR FEATURES



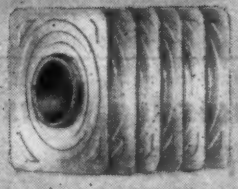
INTERNAL COOLING LEG assures continuous drainage of condensate and makes a simple thermostatic trap practical. It is equal to a run of more than 100 feet of ordinary exterior cooling leg piping.



BUILT-IN EXPANSION PROVISIONS. The "U" type tubes allow expansion and contraction, ease damaging strains.



LEAKPROOF TUBE-TO-HEADER CONSTRUCTION. Joints made by the expanding method assure safety and durability.



SUPERIOR HEATING ELEMENT. Square copper fins on strong seamless copper tubing provide 24% more radiating surface.

Other Points of Thermolier Superiority

Tube design minimizes dirt collection • built-in drainage • continuous rated capacity • heavy frame gives greater rigidity • motor and fan meet specific Thermolier requirements • simple piping connections • adjustable hangers facilitate erection • packed for easy installation.

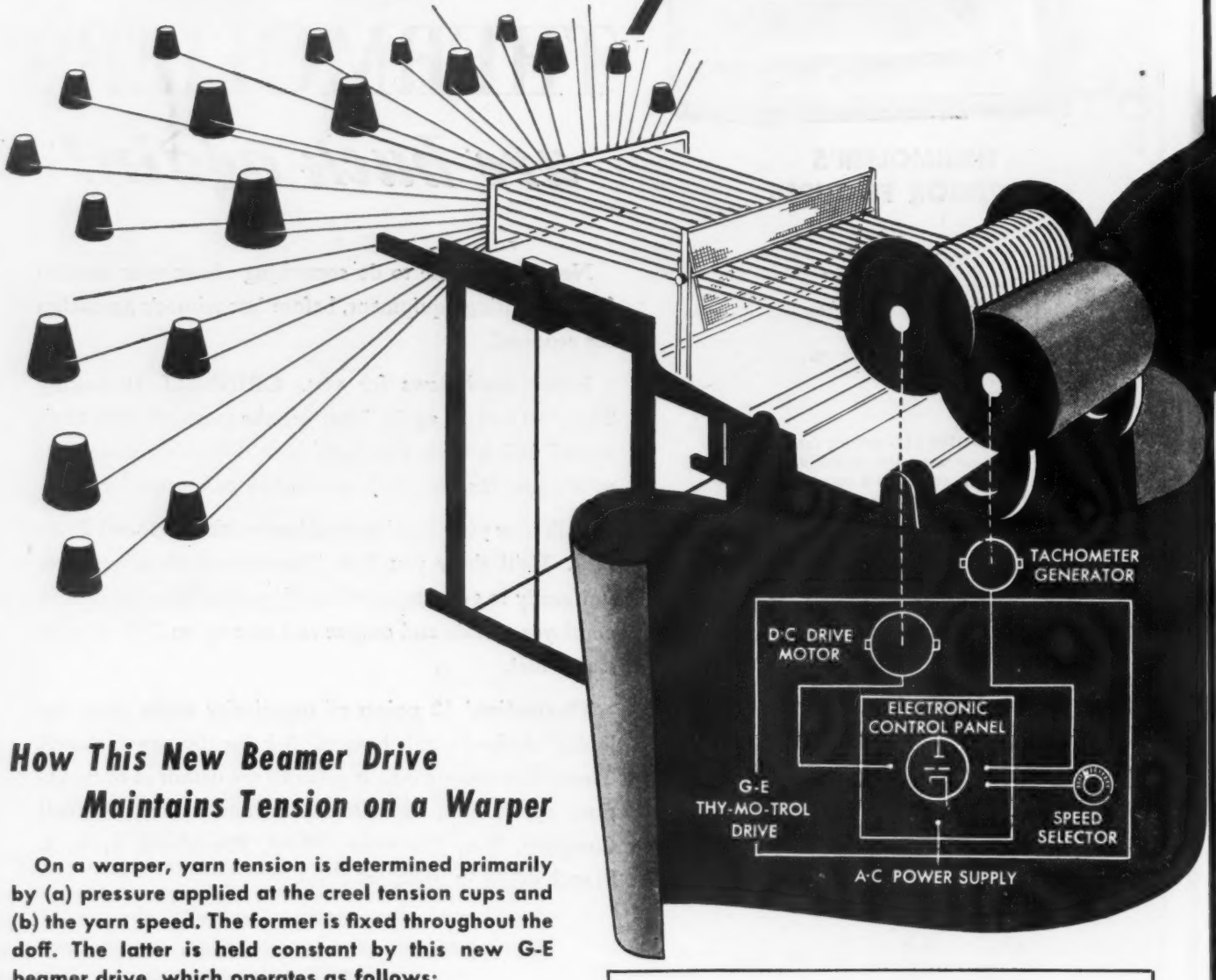
GRINNELL

FOUNDED 1850

Thermolier Unit Heaters

FOR FULL VALUE FROM FUEL DOLLARS

Pampers



How This New Beamer Drive Maintains Tension on a Warper

On a warper, yarn tension is determined primarily by (a) pressure applied at the creel tension cups and (b) the yarn speed. The former is fixed throughout the doff. The latter is held constant by this new G-E beamer drive, which operates as follows:

A tachometer-generator is coupled to the compress roll. Since the speed of this roll is directly proportional to yarn speed, a voltage is generated which is, in turn, proportional to yarn speed.

As the beam diameter increases, yarn speed and roll speed tend to increase. The tachometer generator instantly and continuously transmits the increasing voltage signal to an electronic control panel which automatically and smoothly reduces the driving motor speed to compensate for the increasing beam diameter. Yarn speed is thus kept constant, thereby maintaining a consistent level of tension throughout the beaming operation.

If you're processing yarns at HIGH TENSION . . . . . .

Mill operators who are working with yarns at high tension will be interested in G.E.'s new high-tension, high-precision beamer drive. Now being successfully used on slashers, its close control over beaming tension has helped to reduce "seconds" and has contributed to higher product quality. Requires no friction clutches, slipping belts, or other mechanical equipment.

delicate yarns

NEW G-E beamer drive holds yarn tension within very close limits

SPECIAL care in handling is not enough when you're warping fine rayon, high-counts cotton, and other delicate yarns. Machines, too, should "pamper" the yarn. How? By holding tension to exact standards throughout the beaming operation. This is the function of a new, low-tension, high-precision beamer drive developed by G.E.

Using electronic control, this new drive automatically holds yarn speed constant throughout the doff (within limits of $\pm 0.5\%$). This close control of yarn speed is a fundamental requirement for maintaining tension in the warping operation. The result is more uniform beams with fewer breaks on the slasher. And because there are fewer work stoppages, your output per machine increases.

This new beamer drive is only one of a wide variety of automatic tension-control systems developed by G.E. for practically all textile manufacturing operations. These include drives for slashers, mercerizing ranges, yarn winders, and duo-dye-jigs. A G-E textile application engineer will be glad to discuss the characteristics of any one or all of these systems with you. *Apparatus Dept., General Electric Company, Schenectady 5, N. Y.*

Keep on buying Bonds—*and keep all you buy*

GENERAL ELECTRIC

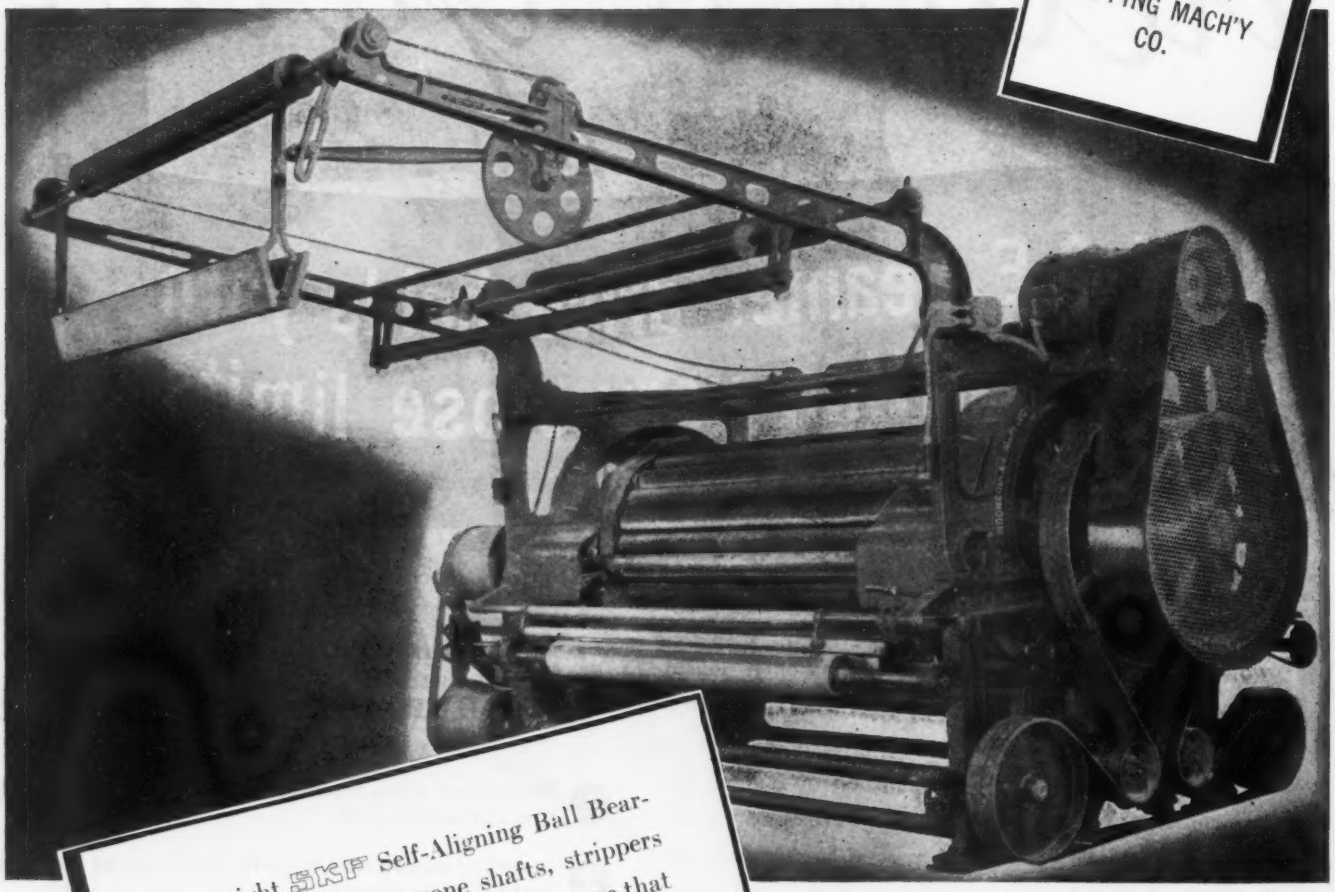
661-26-8823

6 *Major Benefits of the New* G-E BEAMER DRIVE

1. **Maintains yarn tension within very close limits throughout the doff.**
2. **Installed easily and quickly. No cams or mechanical linkages needed.**
3. **There is no motor-generator set or mechanical speed changer to occupy valuable floor space.**
4. **Simple to operate. Yarn speeds are easily set by simple dial adjustment.**
5. **Beamer accelerates smoothly and at a rate which is adjustable; decelerates quickly and smoothly when stop button is pressed.**
6. **Withstands severe mill-service conditions. Requires little maintenance.**

68 SKF FOR SMOOTH-RUNNING ON NAPPERS

BUILT BY THE WOONSOCKET NAPPING MACH'Y CO.



Sixty-eight SKF Self-Aligning Ball Bearings on napper rolls, cone shafts, strippers and idler pulleys are the best assurance that this 24-Roll Double-Action Ball Bearing Napping Machine will run smoothly year after year without bearing trouble. They compensate instantly for misalignment without binding, and never need attention. Select *your* bearings for performance, too; use SKF.

5869

SKF INDUSTRIES, INC., PHILA. 34, PA.

SKF

BALL AND ROLLER BEARINGS

There are Switch and Circuit Breaker

CONDULETS

CONDULETS are made only by CROUSE-HINDS

to meet your every need.

The illustrations show a representative selection from the hundreds of different switch and circuit breaker CONDULETS—each designed for its special purpose, to help you do the job and do it right.

No. 2
of a series of advertisements which demonstrate that CROUSE-HINDS "complete line" means much more than just a range of sizes—there is a wide variety of highly specialized types in each classification.

Type C Condulet with Switch
Type FSQ Interlocking Safety Switch and Receptacle Condulet
Type C Condulet with Vaportight Switch
Type FS, Two-Gang Tandem Vaportight Condulet with Switch and Plug Receptacle
Type MSR Two-Gang Watertight Marine Interlocked Switch and Receptacle Condulet
Type DXE Condulet with Two Switches
Type GS8 Three-Gang Vaportight Condulet with Switches
Type FST Threadless Condulet with Switch
Type FA Four-Gang Watertight Safety Switch Condulet
Type ZT Safety Switch Condulet
Type WMK Raintight Safety Switch Condulet
Type WMKS Raintight Safety Switch and Interlocking Receptacle Condulet
Type FS Condulet with Pilot Light, Switch and Plug Receptacle
Type FS Two-Gang Watertight Marine Switch Condulet
Type GRF Condulet with Switch
Type EFS Explosion-Proof Switch Condulet
Type FSC Vaportight Push Button Station Condulet
Type MSR Three-Gang Watertight Marine Switch and Receptacle Condulet
Type FHRC Mercury Switch Thermostat Condulet
Type FS Vaportight Push Button Station Condulet
Type FG Door Switch Condulet
Type YSW Vaportight and Weatherproof Circuit Breaker Condulet
Type DVS Dust-Tight and Vaportight Circuit Breaker Condulet
Type FDC Vaportight Secondary Breaker Condulet
Type FS Vaportight Condulet with Three Switches
Type FS, Five-Gang Condulet with Switches and Plug Receptacles
Type FS Three-Gang Condulet with Switches
Type WBR Weatherproof Circuit Breaker and Receptacle Condulet
Type EGP Explosion-Proof Mercury Switch Condulet for Panel Mounting
Type EGP Explosion-Proof Push Button Station and Pilot Light Condulet for Panel Mounting
Type GUSC Explosion-Proof Line Starter Condulet
Type EFSC Two-Gang Explosion-Proof Push Button Station and Pilot Light Condulet
Type EFD Explosion-Proof Motor Starting Switch Condulet
Type EFSC Explosion-Proof Control Station Condulet
Type EFSC Explosion-Proof Triple Switch Condulet
Type FGCH Explosion-Proof Switch Condulet for Gasoline Bulk Stations
Type EMS Explosion-Proof Mercury Limit Switch Condulet
Type FSPC Explosion-Proof Switch Condulet with Threaded Cover
Type FLDC Explosion-Proof Secondary Breaker Condulet
Type FLS Explosion-Proof Switch Condulet
Type FSQC Explosion-Proof Interlocked Receptacle and Switch Condulet
Type GUB Explosion-Proof Motor Starting Switch Condulet
Type EFS Explosion-Proof Push Button Switch Condulet
Type HRC Explosion-Proof Mercury Switch Thermostat Condulet
Type EFS Two-Gang Explosion-Proof Push Button Switch Condulet
Type HR Explosion-Proof Thermostat Condulet
Type OFC Explosion-Proof Push Button Station Condulet
Type EPC Explosion-Proof Circuit Breaker Condulet

Complete listings of each type are in Condulet Catalog No. 2500 or in supplementary bulletins.

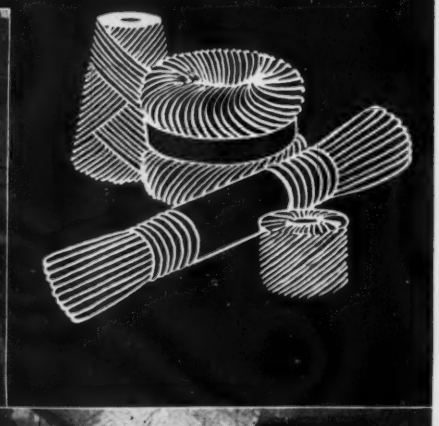
A Nationwide Distribution Through Electrical Wholesalers

CROUSE-HINDS COMPANY
Syracuse 1, N. Y., U.S.A.

Offices: Birmingham — Boston — Buffalo — Chicago — Cincinnati — Cleveland — Dallas — Denver — Detroit — Houston — Kansas City — Los Angeles — Milwaukee — Minneapolis — New York — Philadelphia — Pittsburgh — San Francisco — Seattle — St. Louis — Washington. *Resident Product Engineers:* Albany — Atlanta — Charlotte
CROUSE-HINDS COMPANY OF CANADA, LTD., *Main Office and Plant:* TORONTO, ONT.

CONDULETS · TRAFFIC SIGNALS · AIRPORT LIGHTING · FLOODLIGHTS

Better CORDS AND YARNS— WITH ELECTRO-MATIC AIR FILTERS



Two views of the Electro-Matic installation at Bibb Mfg. Co. Upper left, air intake side; above, rear of unit.

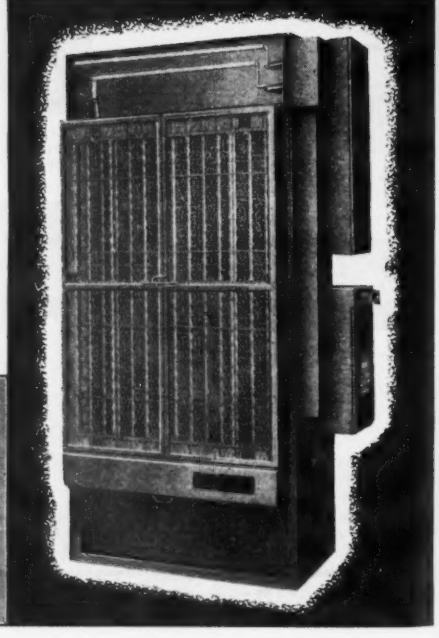
Bibb Manufacturing Co., Macon, Ga. eliminates dust, soot and smoke in drying operations

Many textile organizations are not waiting "until sometime after the war" to install the air filtering equipment that will guarantee clean air for all mill operations. Electro-Matic *super-clean* air can be a big factor in meeting the quality, and volume requirements of current production, both military and domestic. Competition will cause textile quality standards to be even more exacting after the war, than now, and only the most efficient air cleaning equipment will answer the need.

An exclusive advantage of the Electro-Matic is its self-cleaning feature which permits *continuous* operation — at maximum efficiency. Electro-Matic cleans itself as it cleans the air. Write today for Bulletin No. 250-C.

AMERICAN AIR FILTER COMPANY, INC.
304 Central Avenue — Louisville 8, Ky.
In Canada: Darling Bros., Montreal, P. Q.

AAF
ELECTRO-MATIC
THE SELF-CLEANING ELECTROSTATIC AIR FILTER



A technical service for users of Eastman acetate rayon

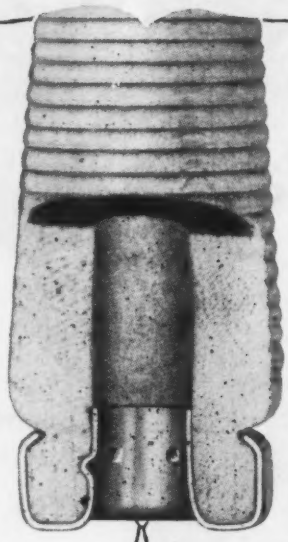
Pad and jig set-up—part of the laboratory equipment which includes facilities for all types of dyeing and printing, and for all important fastness tests.

For information on dyes and dyeing methods best suited to fabrics containing Eastman acetate rayon, have your dyer check with our Fabric Dyeing Service Laboratory. Its research is constantly directed toward improving the fastness properties of fabrics woven with Koda continuous filament yarn and with Teca staple fiber. It will help you select a range of colors to meet special fastness requirements suited to the specific end use of the fabric.

The Fabric Dyeing Service Laboratory is located at 10 East 40th Street, New York City.

A. M. TENNEY ASSOCIATES, INC., 10 E. 40th STREET, NEW YORK 16, SALES REPRESENTATIVES FOR TENNESSEE EASTMAN CORPORATION, KINGSPORT, TENN., SUBSIDIARY OF EASTMAN KODAK CO.

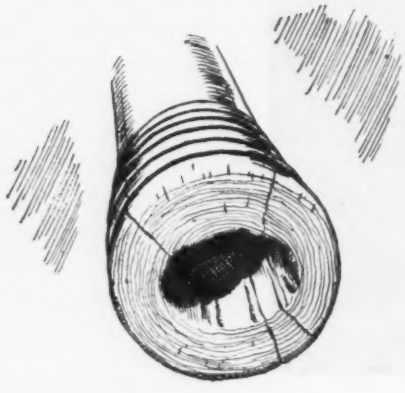
U. S. "ARMORED" WARP BOBBINS
beat wear . . trim costs . . improve production



"PENNY-WISE" Bobbin buying never pays off to anyone – except, perhaps, your competitors! Paying a *little* extra for the best type warp bobbins saves a *lot* of money in the long run. That's why farsighted mill-men look at costs, not price, when they buy.

YOU PAY only a little more for U S Warp Bobbins "Armored" with combination brass shields and bushings. But this extra built-in endurance gives you year after year of trouble-free performance. Protected against splintering and splitting, they always seat properly on the spindle.

PUT U S BOBBINS IN YOUR POSTWAR PRODUCTION PLANS



YOU AVOID the vibration, breakage, and reduced production that occurs when unprotected bobbins wear out of round. You avoid warping and freezing on spindles, and extra expense for reaming. And, trouble from heat generated by high speeds and heavier packages will pass you by.

FOR ANY SYSTEM of spooling and warping, including the Barber-Colman, U S can provide bobbins with the proper type of combination shields and bushings. Talk to a U S representative about your requirements. He can show you just what you want – in Bobbins – and in Shuttles, Cones, Spools.

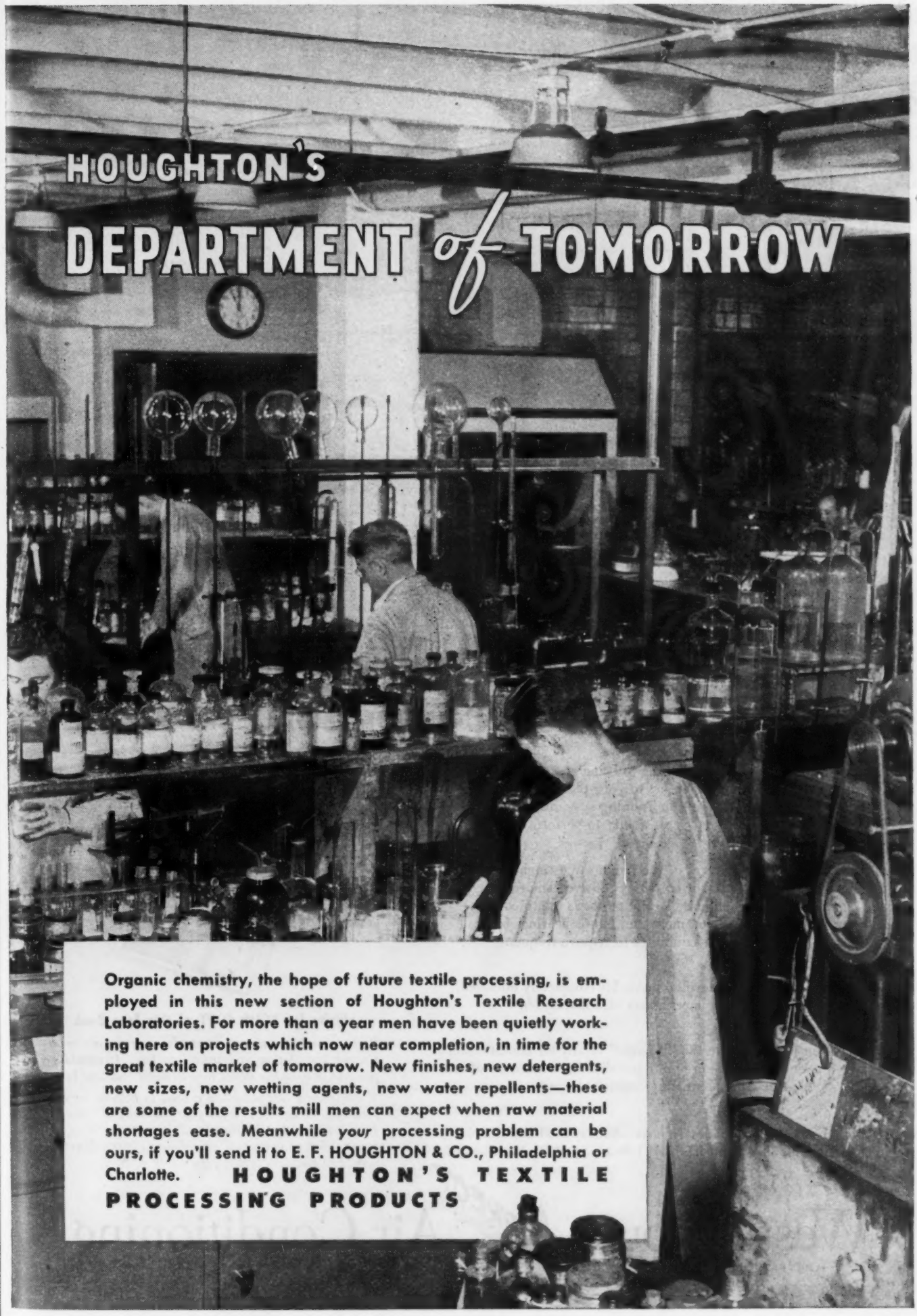
U S BOBBIN & SHUTTLE CO.

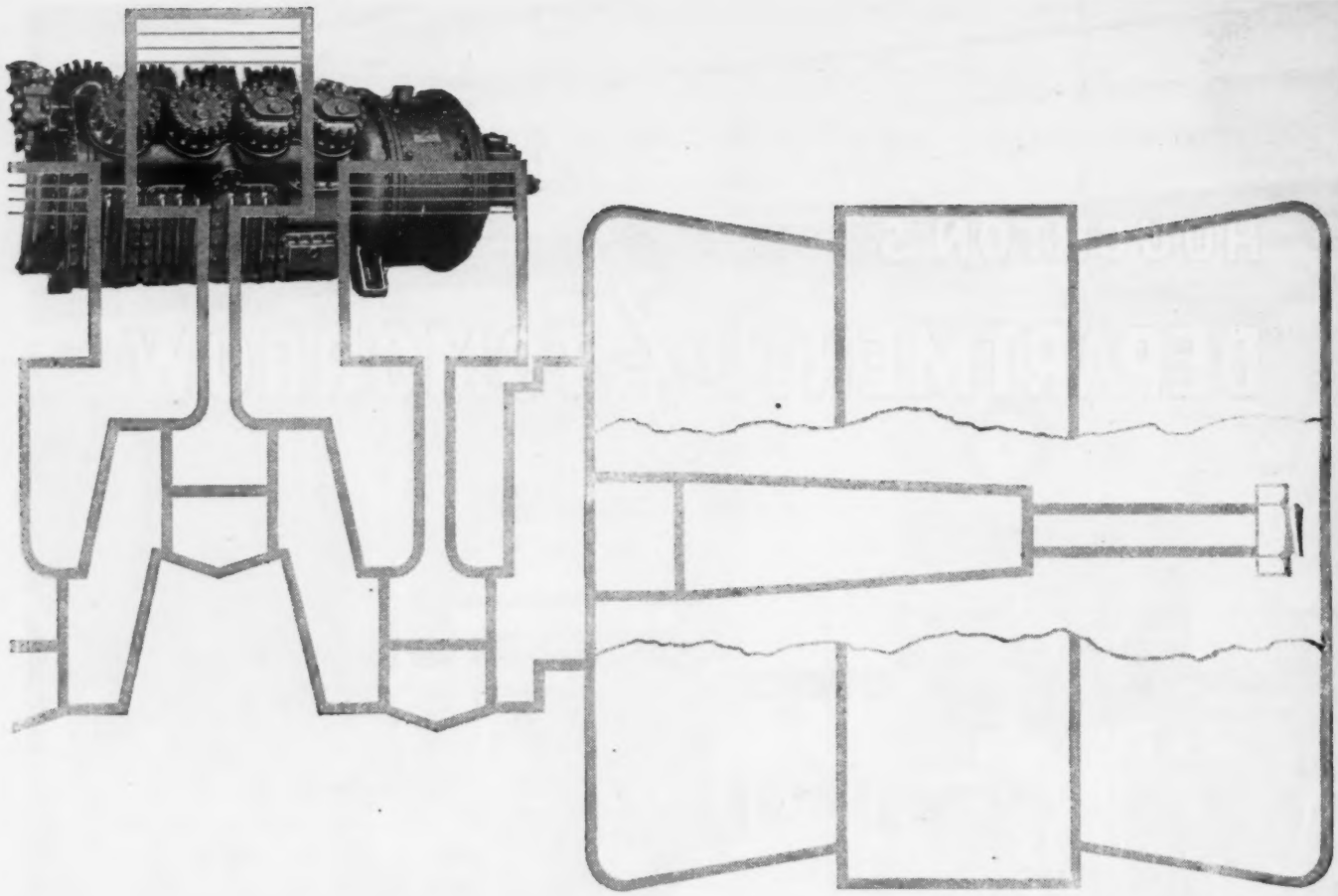
PROVIDENCE, R. I.
GREENVILLE, S. C.
CHICAGO AGENT:
Albert R. Breen,
20 E. Jackson Blvd.

LAWRENCE, MASS.

CANADIAN AGENT:
W. J. Westaway
Montreal, Que. – Hamilton, Ont.

JOHNSON CITY, TENN.
CHARLOTTE, N. C.
ALABAMA AGENT:
Young & Vann Supply Co.
Birmingham


HOUGHTON'S
DEPARTMENT of TOMORROW
Organic chemistry, the hope of future textile processing, is employed in this new section of Houghton's Textile Research Laboratories. For more than a year men have been quietly working here on projects which now near completion, in time for the great textile market of tomorrow. New finishes, new detergents, new sizes, new wetting agents, new water repellents—these are some of the results mill men can expect when raw material shortages ease. Meanwhile *your* processing problem can be ours, if you'll send it to E. F. HOUGHTON & CO., Philadelphia or Charlotte.
HOUGHTON'S TEXTILE PROCESSING PRODUCTS



WHAT HAS "*DIRECT DRIVE*" TO DO WITH CORRECT AIR CONDITIONING ?

You will depend upon air conditioning to bring greater efficiency, better production control and more comfort to your plant. But—an air conditioning system . . . *any* air conditioning system . . . depends primarily upon its compressor for its ability to perform satisfactorily and efficiently.

One of the outstanding features of the famous Westinghouse Hermetically-Sealed Compressor is its direct drive. The rotating element of the dependable Westinghouse electric motor is mounted *directly* on the crankshaft. That means no motor bearings to need attention, no belts, pulleys or couplings to require frequent adjustment or replacement.

There are no shaft seals to develop leaks. Its completely enclosed, hermetically sealed operating mechanism means *sealed-in* power, *sealed-out* trouble.

It will pay you to investigate the "innards" of any air conditioning system you plan to buy. Be sure your installation is made up of *matched*, trouble-free equipment. Buy dependable performance!

Write for YOUR COPY of this Free Book

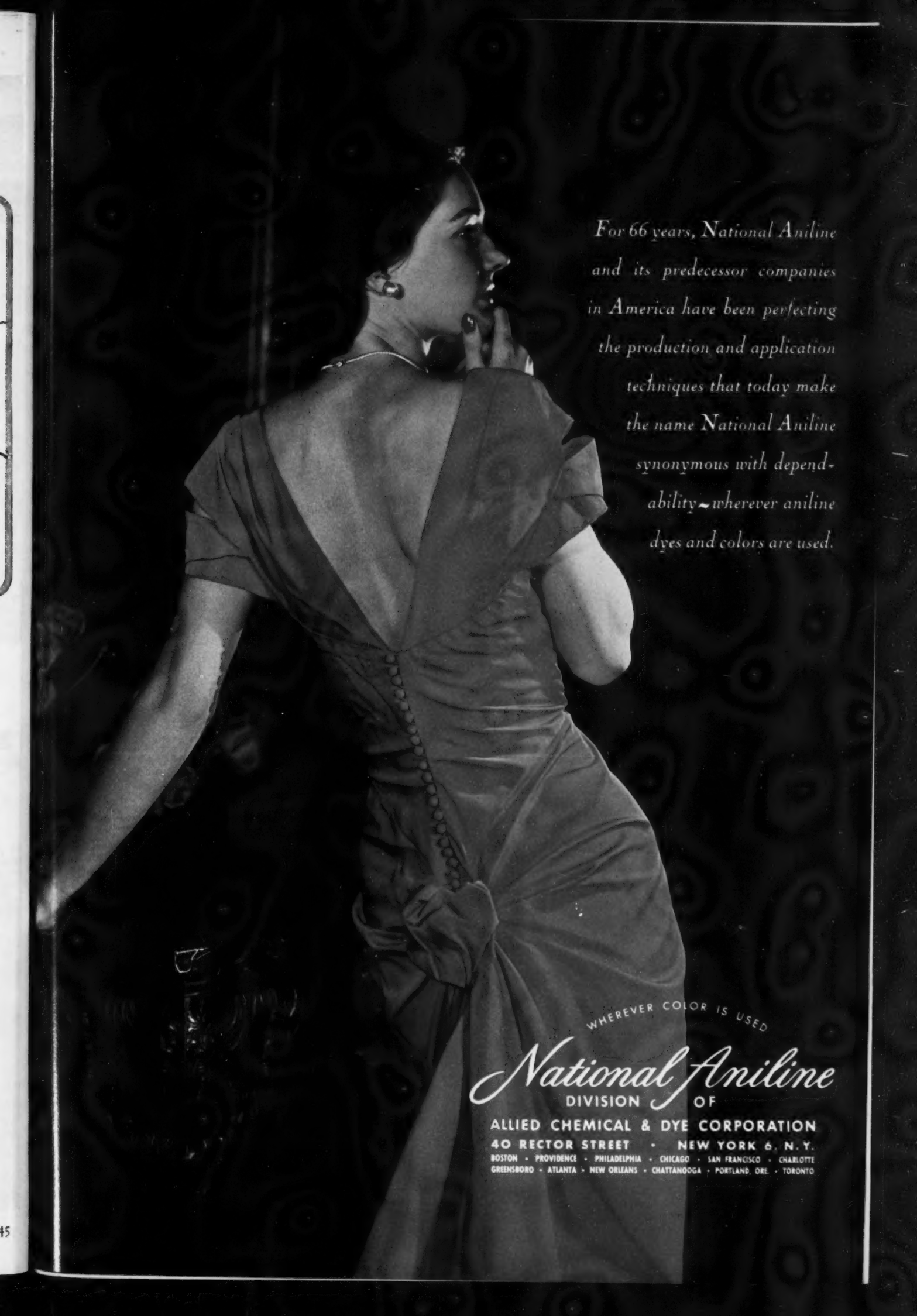
Right now *is the time to start planning the air conditioning installation you intend to buy. It should be planned in complete detail* now *to avoid lost time* later!

Westinghouse has published a book to help make your planning job easier. Ask for your free copy of "How to Plan Correct *Air Conditioning." 'Phone any Westinghouse Office or write to Westinghouse Electric Corporation, 150 Pacific Avenue, Jersey City 4, N. J.*

Westinghouse presents John Charles Thomas—Sunday 2:30 E.W.T., N.B.C. Tune in Ted Malone Monday through Friday 11:45 a.m., E.W.T., Blue Network.

Westinghouse CORRECT Air Conditioning

PLANTS IN 25 CITIES OFFICES EVERYWHERE


For 66 years, National Aniline and its predecessor companies in America have been perfecting the production and application techniques that today make the name National Aniline synonymous with dependability ~ wherever aniline dyes and colors are used.
WHEREVER COLOR IS USED
National Aniline
DIVISION OF
ALLIED CHEMICAL & DYE CORPORATION
40 RECTOR STREET • NEW YORK 6, N.Y.
BOSTON • PROVIDENCE • PHILADELPHIA • CHICAGO • SAN FRANCISCO • CHARLOTTE
GREENSBORO • ATLANTA • NEW ORLEANS • CHATTANOOGA • PORTLAND, ORE. • TORONTO

L. F. Dommerich & Company

Executive and General Offices

271 MADISON AVENUE
NEW YORK, N. Y.

Telephone: AShland 4-8650

FACTORS

For Manufacturers and Merchants

Inquiries as to our services solicited

●

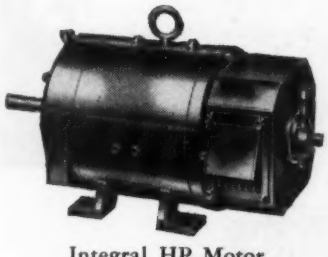
ESTABLISHED 1840

To Men Who Know Motors

. . . we could end our message here!

To men who know motors, a picture like this is worth the proverbial ten thousand words. It speaks with convincing eloquence of craftsmanship to which any motor builder could point with pride.

If you visit Star's modern plant, you'll see scores of examples of the same painstaking craftsmanship that pays off in outstanding performance for Star customers.



Integral HP Motor for Direct Current

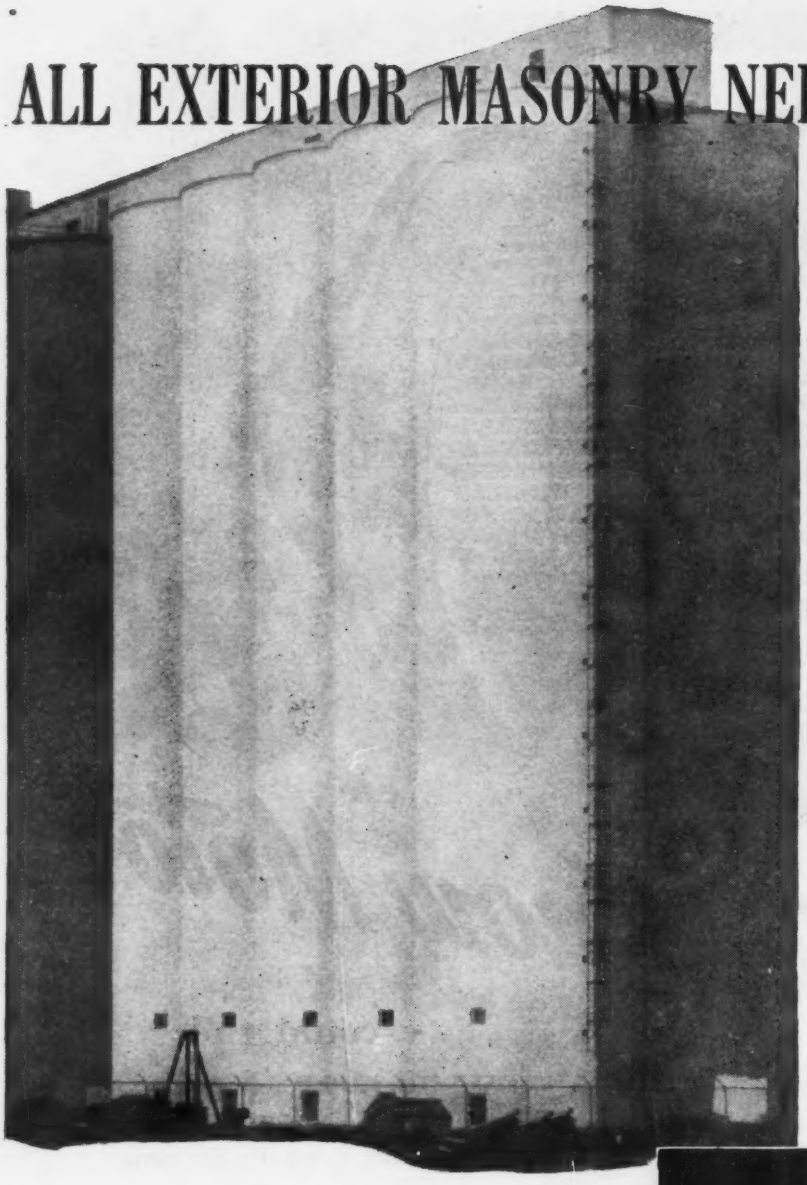
Star not only builds motors well, but also takes leadership in design. Star pioneered ball bearing motors . . . led in welded steel construction . . . developed the famed Star Built-in Magnetic Disc Brake for motors . . . pioneered in the field of gear-motors.

Whether you need special or standard motors, ⅛ to 200 H.P., it will pay to learn why so many critical buyers specify "Star". Some standard motors are ready for early delivery. Star Electric Motors Co., 212 Bloomfield Avenue, Bloomfield, N. J.

STAR MOTORS

POWER PACKAGED AS YOU NEED IT

ALL EXTERIOR MASONRY NEEDS A RAINCOAT...

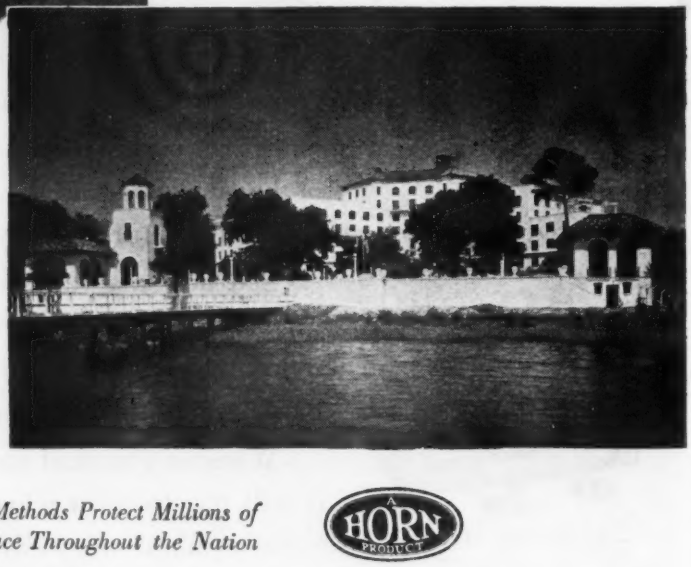


from Northwest Flour Mills to Southern Resort Hotels

To extend the life of your property you must impede water penetration into concrete, brick or stucco walls, prevent reinforcing bar rust, spalling or disintegration. All this is accomplished by Waterfoil which is unlike any other protective coating. Waterfoil is manufactured of irreversible inorganic gels which bond chemically and physically to form a dense, hard protective outer layer on masonry surfaces.

PROTECT YOUR PROPERTY NOW!

Shabby structures treated with Waterfoil undergo an amazing change in appearance and condition. Waterfoil is available now. It is easily applied. It took ten years to develop and test. Send today for the Waterfoil literature. It's important.



Horn Products and Methods Protect Millions of Square Feet of Surface Throughout the Nation

A HORN PRODUCT

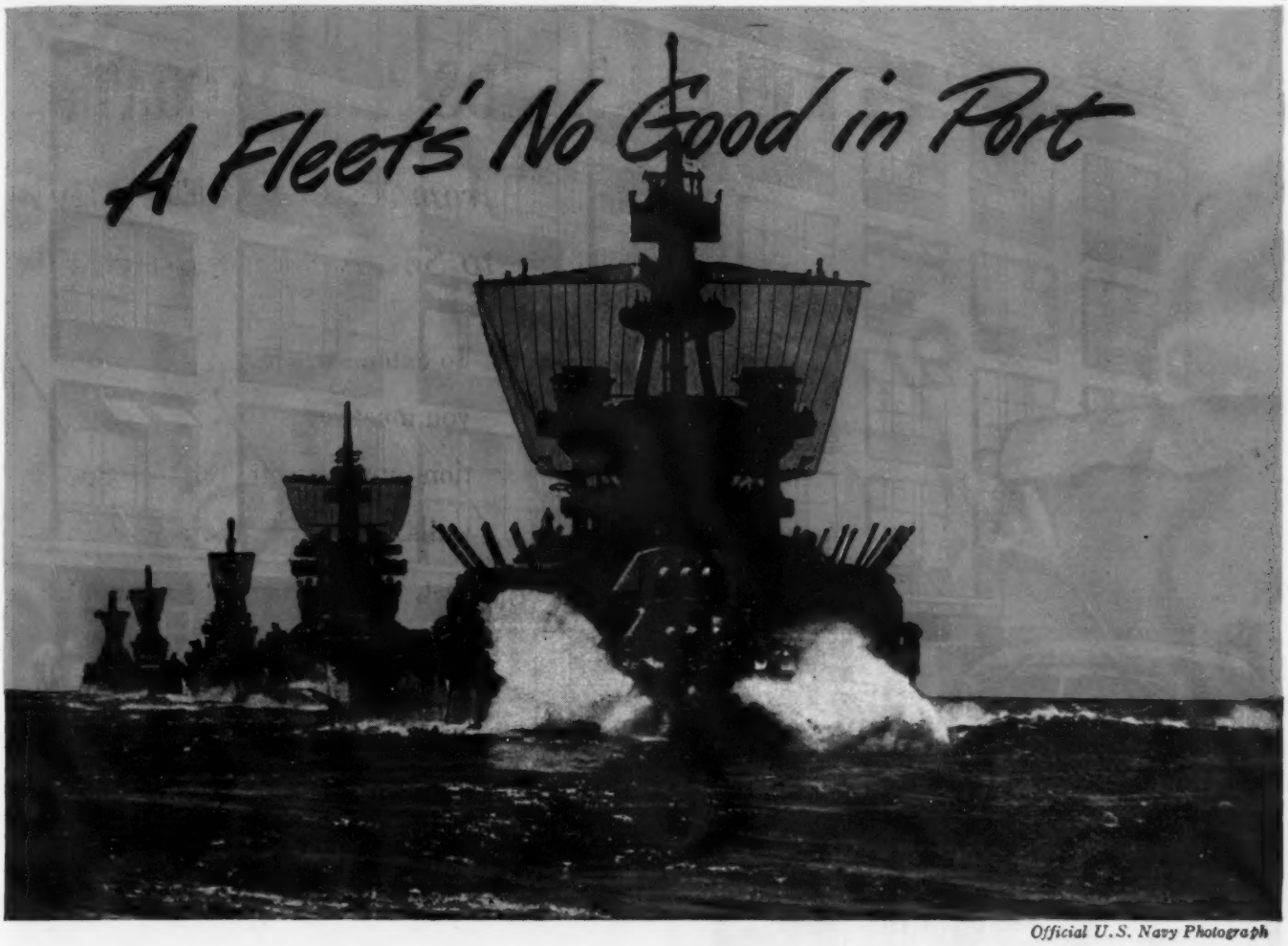
WATERFOIL

THE UNIQUE TREATMENT FOR EXTERIOR MASONRY SURFACES

A. C. HORN COMPANY

Established 1897

Manufacturers of Materials for Building Maintenance and Construction • Long Island City 1, N. Y.
Houston, Texas • San Francisco, Calif.



Official U.S. Navy Photograph

Columbia keeps its fleets of Chlorine and Caustic Cars IN ACTION!

Typical Records . . .

Chlorine Car PPGX 217—
8,742 miles in delivering to eight different industries within 118 days.

Chlorine Car PPGX 223—
8,639 miles in 98 days, also to 8 industries.

Caustic Car GATX 32934—
12,615 miles in 140 days, 14 different industries.

Caustic Car GATX 32941—
10,026 miles, delivering to 18 industries in 140 days.

One of the highly important factors in our Navy's successes has been the maintenance of the various fleets at sea for an extraordinarily high percentage of time. Officers fly back to bases in advance of their fleet's return, for example, to assemble supplies for immediate loading.

Columbia, too, speeds the turnaround of its fleets of special cars. Inspection, reconditioning and loading are handled with all possible dispatch in order to increase the productivity of every car.

Customers and carriers have co-operated in speeding turnarounds and rolling up the miles for a most impressive record for these fleets. This continued teamwork, especially while demands on transportation facilities remain high, will be repaid in the delivery of greater volumes of these essential war supplies.

COLUMBIA CHEMICALS

PITTSBURGH PLATE GLASS COMPANY • COLUMBIA CHEMICAL DIVISION

GRANT BUILDING, PITTSBURGH 19, PENNSYLVANIA

Chicago • Boston • St. Louis • Pittsburgh • New York • Cincinnati • Cleveland • Philadelphia • Minneapolis • Charlotte • San Francisco

COLUMBIA ESSENTIAL INDUSTRIAL CHEMICALS

Soda Ash • Caustic Soda • Sodium Bicarbonate • Liquid Chlorine • Silene EF (Hydrated Calcium Silicate) • Calcium Chloride • Soda Briquettes Modified Sodas • Caustic Ash • Phosflake • Calcene T(Precipitated Calcium Carbonate) • Calcium Hypochlorite

Why FREIGHT ELEVATORS are important!

BEHIND this busy scene, freight elevators are constantly on the job . . . keeping supplies and even the trucks themselves moving on schedule . . . without bottlenecks . . . without confusion.

For intensive service, the elevators should be high speed, automatic in operation and provided with power operated doors. Such equipment will compensate for some of the time lost in loading and unloading operations.

If conditions require, freight elevators can be dispatched to predetermined floors to suit any cycle of operation. Also, they do not necessarily require regular attendants.

Your nearest Otis representative is now available to assist you and your Architect in making preliminary elevator plans and studies. For the finest in vertical transportation tomorrow, call your Otis representative TODAY!

Otis ELEVATOR COMPANY
OFFICES IN ALL PRINCIPAL CITIES

This DRAX tag will be a recognized symbol of plus value

The big new name in fabric finishes

It's JOHNSON'S DRAX

Trademarks Reg. U. S. Pat. Off.

BIG NEWS...DRAX service rapidly becoming available at laundries and dry cleaners everywhere!

Yes, Johnson's DRAX is a truly *different* fabric finish! Not only is it an amazingly efficient water-repellent that also guards fabric freshness, but it is *easily* renewable at neighborhood laundries and dry cleaners. This is exciting news because it means that a DRAX-protected fabric can *always* be as completely water-repellent and stain-resistant as when it was new.

Furthermore, DRAX gives superior results in use. Tests conducted by an independent laboratory showed that DRAX produced a water-repellency efficiency exceeding Army specifications for initial spray rating. DRAX is easy and inexpensive to use and may be applied, not only to cellulose fibres, but to *any* textile.

Technically, DRAX is a simple wax emulsion which stays stable in solution, is non-flammable. Textile mills already using DRAX find that it adds a definite profit-*plus* to fabrics without being costly or difficult to use.

DRAX tags are available to identify DRAX-treated fabrics to customers. Be ready for the big demand. Learn about DRAX now.

S. C. Johnson & Son, Inc., Fabric Finishes Division, Racine, Wis. Starrett Lehigh Building, 601 West 26th St., New York 1. Or any of our other 18 district offices.

Tune in Fibber McGee and Molly — Tuesday night — NBC

***DRAX** is made by the makers of*

***JOHNSON'S WAX** (A name everyone knows)*

Guaranteed by Good Housekeeping

★ *Buy Victory Bonds — to KEEP!* ★

S. C. JOHNSON & SON, Inc., Dept. TW-95, Racine, Wis.

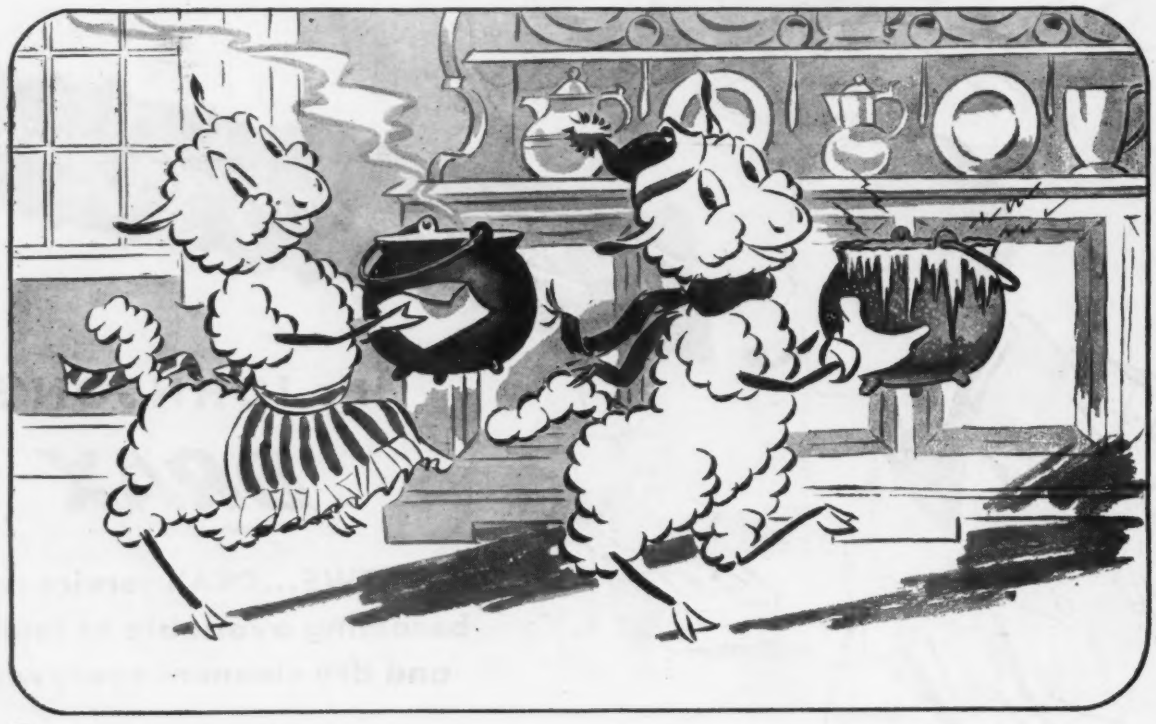
Yes, I'd like to try DRAX. Please send my FREE sample, plus instructions and complete information.

Name _____

Firm Name _____

Address _____

City _____ *State* _____



"some like it hot... some like it cold..."

Perhaps you've never experimented with **cold water scouring.** But if you have, you know that **just any soap won't do** a satisfactory job at low temperatures.

You'll get A-1 scouring—hot or cold—if you use Olate.

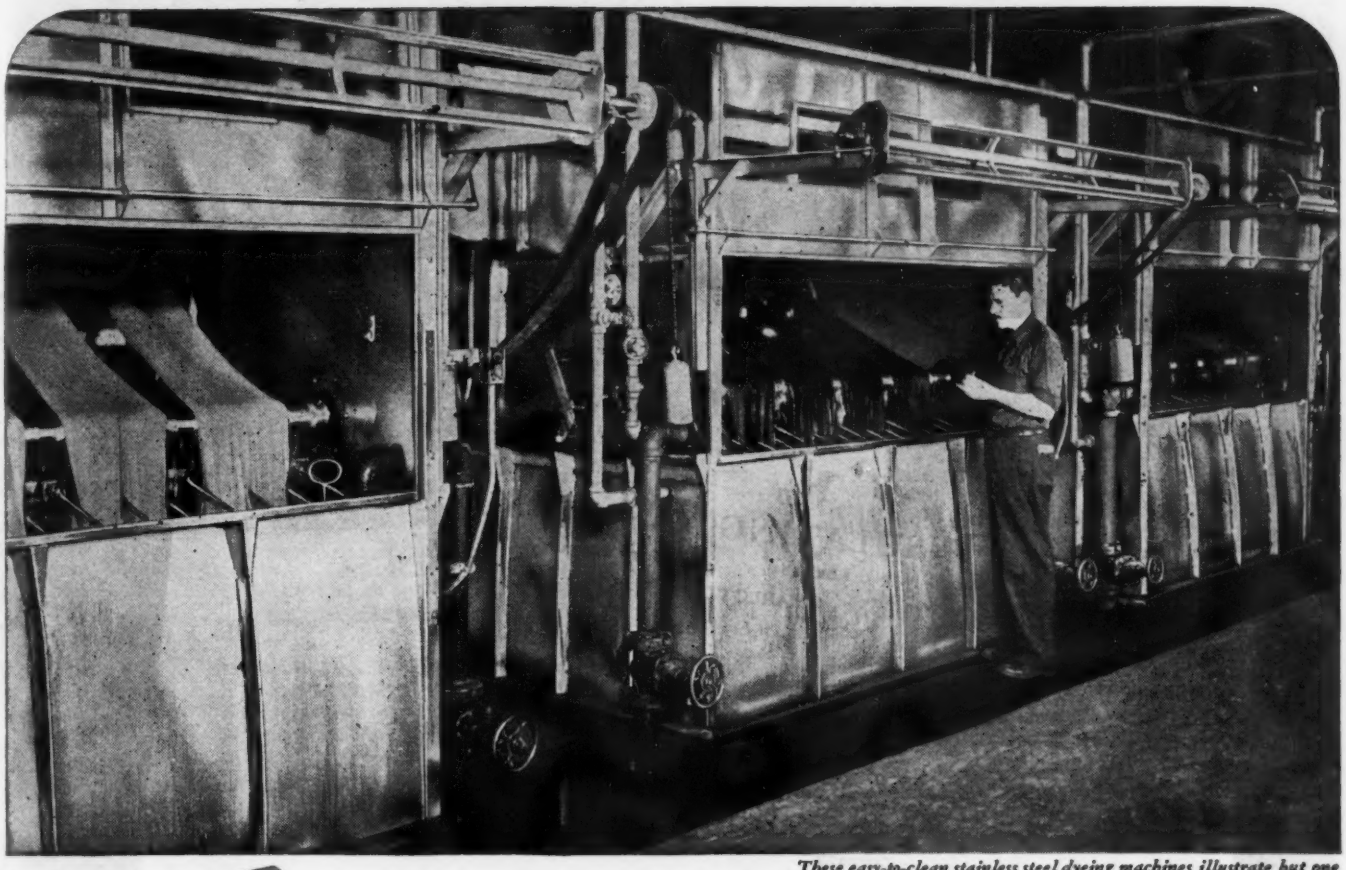
A much **higher percentage of Liquid fats** goes into the making of Olate than into most textile soaps. That's why **it can handle scouring efficiently** at any reasonable temperature. That's why Olate has such a **low titer.** That's why it **dissolves so fast** into unusually fluid solutions which **penetrate fast, clean rapidly, rinse readily** from wool fabrics.

It is significant that many of America's leading commission scourers and mills which scour their own woolens and worsteds have **long standardized on Olate.** There's likely to be a **place in your mill** where Olate can help speed up production or cut processing costs.

Procter & Gamble

Olate

safe and efficient for every textile soap usage.



These easy-to-clean stainless steel dyeing machines illustrate but one of many applications for lustrous Republic ENDURO in processing industries. Others include: mixers, condensers, evaporators, filters, valves, drums and tubing.

Enduro Pays in many ways

Improved Employee Relations
Easy to Clean
Non-Contaminating
Strong—Long Lasting
Resistant to Rust and Corrosion
Resistant to Heat
Easy to Fabricate
Universal Acceptance
Low Ultimate Cost

Lustrous, bright, sanitary appearance—plus factor of Republic ENDURO Stainless Steel—pays prompt dividends in improved employee relations.

ENDURO is clean—and remarkably easy to clean. It makes work easier. Employees take pride in keeping it spotless. They find new incentive in the bright, cheerful atmosphere created by gleaming ENDURO equipment. And its smooth, shiny surface never wears out because ENDURO is solid stainless steel all the way through.

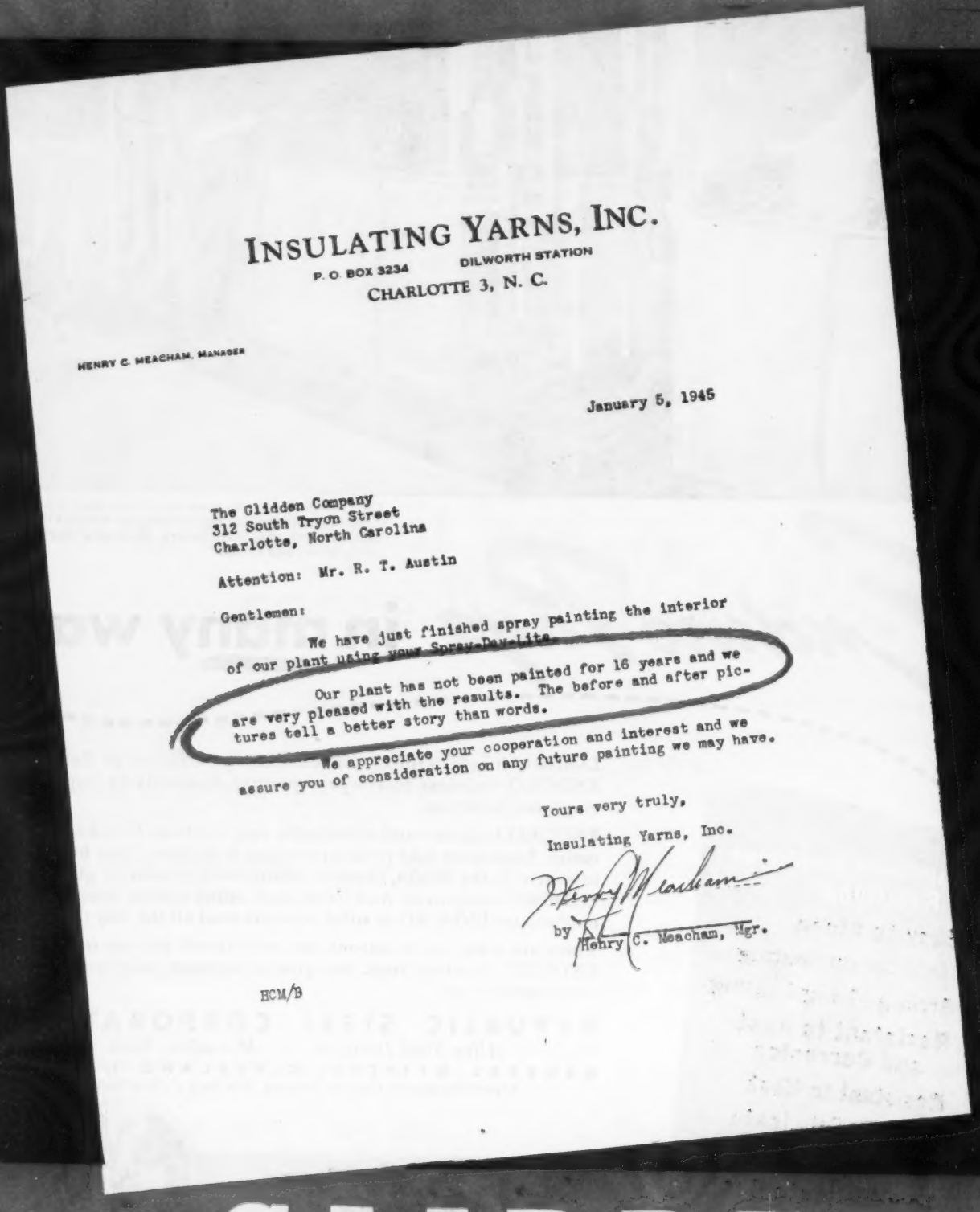
There are many other reasons, too, why it will pay you to specify ENDURO Stainless Steel. See your equipment manufacturer or write directly to:

REPUBLIC STEEL CORPORATION
Alloy Steel Division • Massillon, Ohio
GENERAL OFFICES: CLEVELAND 1, OHIO
Export Department: Chrysler Building, New York 17, New York

Republic
ENDURO STAINLESS STEEL
Reg. U. S. Pat. Off.

Other Republic Products include Carbon and Alloy Steels—Pipe, Sheets, Strip, Plates, Bars, Wire, Pig Iron, Bolts and Nuts, Tubing

Plant not painted for 16 years
...a real test for...



INSULATING YARNS, INC.
P. O. BOX 3234 DILWORTH STATION
CHARLOTTE 3, N. C.

HENRY C. MEACHAM, MANAGER

January 5, 1945

The Glidden Company
312 South Tryon Street
Charlotte, North Carolina

Attention: Mr. R. T. Austin

Gentlemen:

We have just finished spray painting the interior of our plant using your Spray-Day-Lite.

Our plant has not been painted for 16 years and we are very pleased with the results. The before and after pictures tell a better story than words.

We appreciate your cooperation and interest and we assure you of consideration on any future painting we may have.

Yours very truly,

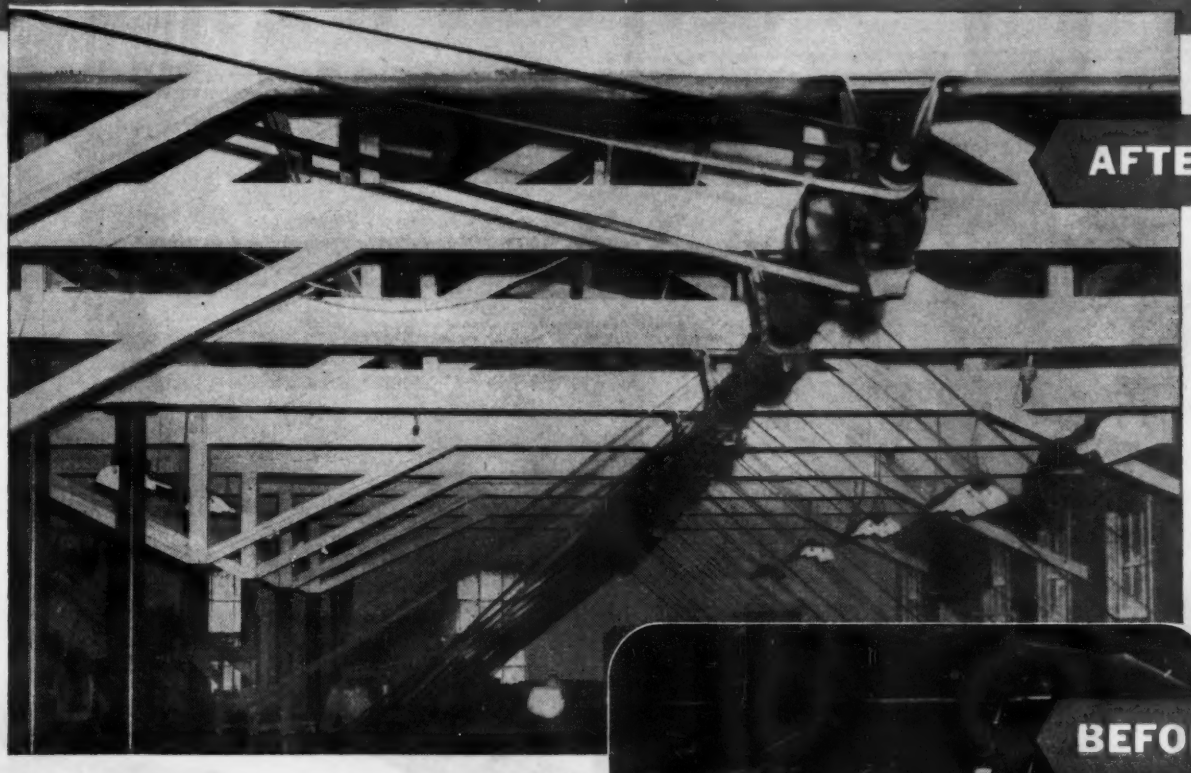
Insulating Yarns, Inc.

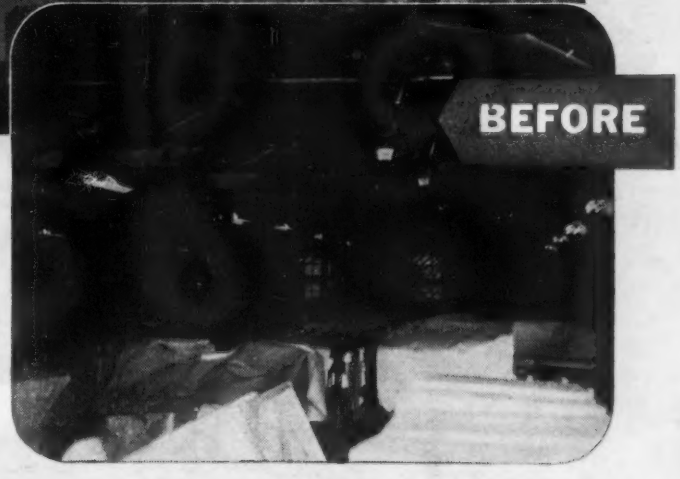
by Henry C. Meacham, Mgr.

HCM/B

GLIDDEN

SPRAY-DAY-LITE





Sensational record of superb maintenance paint based on PERFORMANCE

In painting a plant whose interior had not been painted in *16* years, Insulating Yarns, Inc., saw proof of the statement that Glidden SPRAY-DAY-LITE gives smooth, solid covering over even the dirtiest of surfaces. And the "before and after" pictures of Insulating Yarns' plant reproduced above furnish convincing evidence of the *improved lighting* that results when SPRAY-DAY-LITE is used.

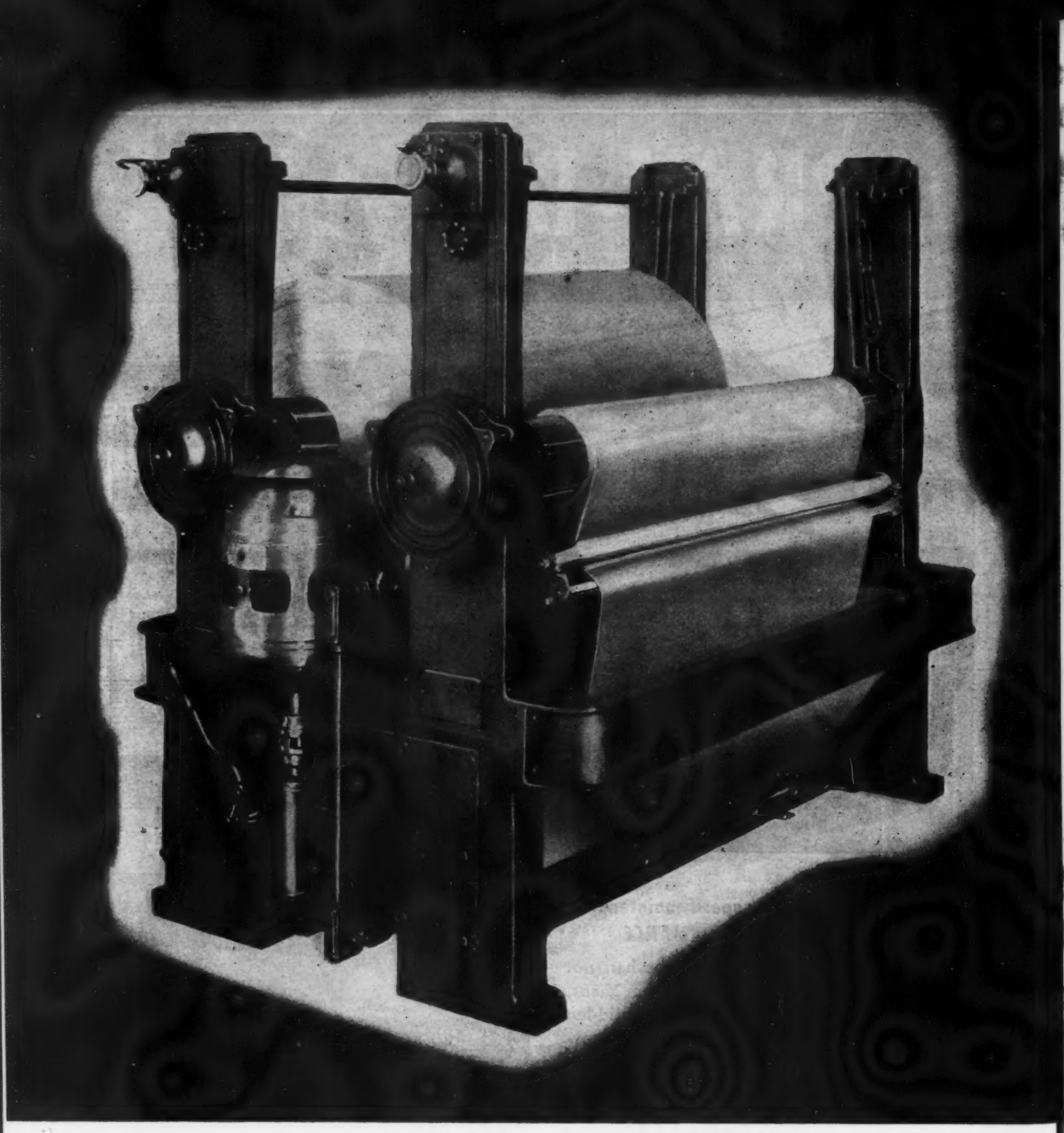
Sprayed or brushed, just one coat of SPRAY-DAY-LITE gives conventional two-coat results. Its durable, egg-shell finish eliminates glare—washes like tile. Its intense white *stays* white!

Send for new Color Chart visualizing the wide range of pleasing combinations possible with the 10 beautiful SPRAY-DAY-LITE colors—or see a demonstration of SPRAY-DAY-LITE in your own plant by a Glidden engineer. For one or both, just write

THE GLIDDEN COMPANY • Cleveland 2, Ohio

TIME-TESTED

Pacemaker in Paints



A DYEING MACHINE THAT IS comparatively TENSIONLESS

The new fabrics . . . Aralac, Vinyon, Saran and many others that will be used extensively after the war . . . are like rayon and acetate in that tension in the dyeing operation is harmful. The Van Vlaanderen Tensionless Dyeing Machine shown above has been designed specifically to minimize tension. Because both rolls are driven, there is the minimum of distortion even under the highest bath temperature usable. The cloth speed is constant at all times, relieving the operator of much work in securing even dyeing results. If desired, automatic stopping and reversing equipment is available.

Now widely used in many plants, this machine will be increasingly valuable for processing the new fabrics. Write for full information.

VAN VLAANDEREN MACHINE COMPANY

370 STRAIGHT ST., PATERSON 3, N. Y.

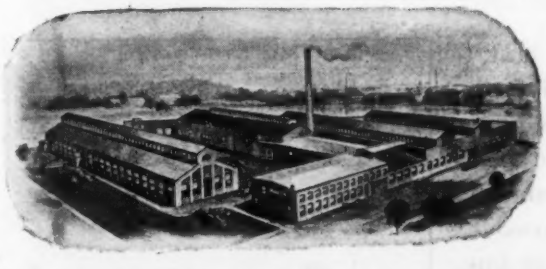
World's largest manufacturer of Machinery for processing modern fabrics

Powerful IS THE WORD FOR SULFRAMINE DT*

Ultra's amazing new POWDER detergent

Leading textile mills are finding Sulframine DT an exceptionally efficient and economical detergent. Chemically classified as an alkylaminosulphate, it can be utilized in almost every phase of boiling off and dyeing. As an emulsifier and foaming agent, Sulframine DT dissolves readily, and it will form rich suds even in dilutions of one to ten thousand or more parts of water. Not even the most severe water conditions can affect its phenomenal properties.

Sulframine DT is totally immune to lime and magnesium salts . . . resistant to acids and alkalies . . . and will not deteriorate in storage. In fact, it can replace soap, eliminating the dangers of rancidity and stains left by unrinsed soap particles. Too, the thorough dispersing qualities of Sulframine DT make it an ideal dyeing assistant for rayon and acetate fabrics. Let a test prove your need for Sulframine DT. One of our technicians will be glad to bring you a practical mill run sample.



NOTE: Sulframine DT has potent commercial uses in dozens of other industries: Dry Cleaning, Dairy, Steel, Insecticide, Cosmetics, and Household Preparations. Wire or write—today—for more detailed information.

ULTRA CHEMICAL WORKS
INCORPORATED

Paterson, N. J. Chicago, Ill. New York Office, 500 5th Ave.

OTHER ULTRA CHEMICAL PRODUCT DEVELOPMENTS . . . ULTRAMINE • DETERGOL • SULFRAMINE DT PASTE
SULFRAMINE DR PASTE • SULFRAMINE POWDER • ALBUTEX • ALBUTINE • DERMASOL • ULTRA GLOSS R • DULLITE T

*Sulframine DT is made from an exclusive formula—U. S. Pat. Pending

SULFRAMINE DT—REG. U. S. PAT. OFF.

One of a series of adventures of the Armour Soap Sleuth

Solving the great scum mystery

"THESE BOLTS are driving me nuts!" shouted the mill manager. "Just look at that *scum!* We can't knock it out with our after-scouring!"

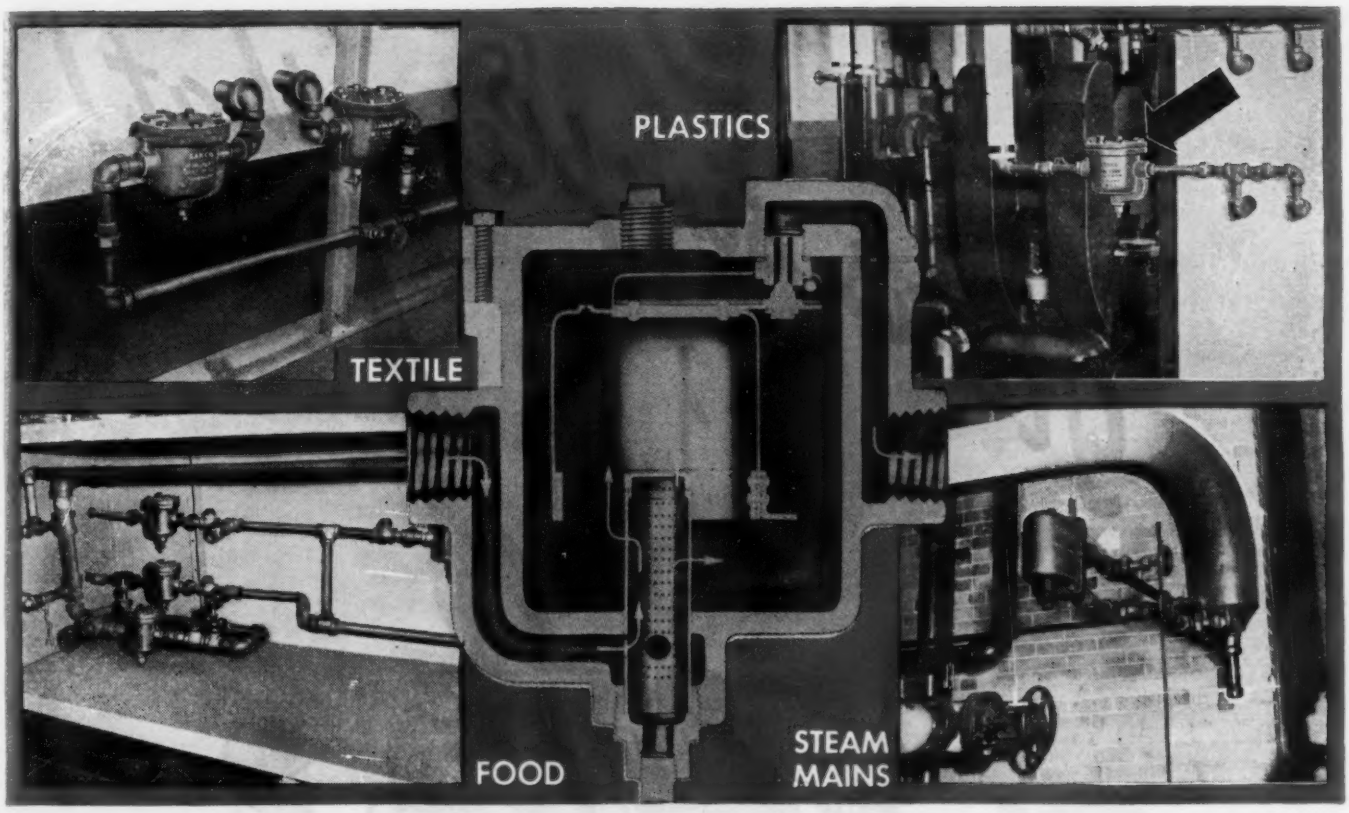
Inspecting the faulty rolls minutely, the Armour Soap Sleuth announced, "This tragedy could have been avoided with the *right kind of soap* . . . a soap that gives rich, dirt-loosening suds at peak heat."

You see, *after-scouring* calls for a high-titer soap like *Armour's Flint Chips* to knock out scum and then rinse quickly. With a guaranteed titer of 41-42°C. this swell Armour soap gives you active suds at top temperatures—penetrates instantly. And *Flint Chips'* fast-rinsing feature prevents rancidity.

INDUSTRIAL SOAP DIVISION

Armour and Company

1355 West 31st St., Chicago 9, Illinois



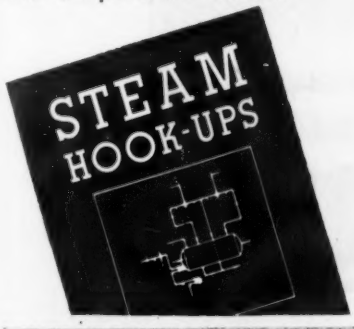
WHERE SHOULD A BUCKET STEAM TRAP BE USED?

You can't standardize on one type of trap for any plant—successfully. But for the applications illustrated above, the Sarco Bucket Trap is eminently successful. The textile dryer, the plastics press, the hot plates in a hospital, and the main steam line drain, all call for intermittent ejection of condensate in large volumes—and fast. Thousands are in service also in laundries, refineries and on heat exchangers and other power plant equipment.

The Sarco Bucket Trap has a straight through connection and a built-in strainer. Easily piped in minimum space and at low cost. All mechanism is on the cover. Can be inspected without disturbing connections. Standard sizes up to 250 lbs. Forged steel types to 900 lbs. Ask for Bulletin No. 350.

Use the Sarco Bucket Trap only where it belongs. We make three other types and can fit the trap to the job. They are blood relations—work together well in any combination.

The Sarco Hook-Up book shows when and how to use all types of steam traps and temperature control.



108

FOUR STARS ON OUR E PENNANT TESTIFY TO SARCO PERFORMANCE IN THE WAR EFFORT

ARMY E NAVY

SARCO SAVES STEAM

Represented in Principal Cities

SARCO COMPANY, INC., 475 FIFTH AVE., NEW YORK 17, N.Y. • Sarco Canada, Ltd., 85 Richmond St., W., Toronto 1, Ont.

It's as simple as that!

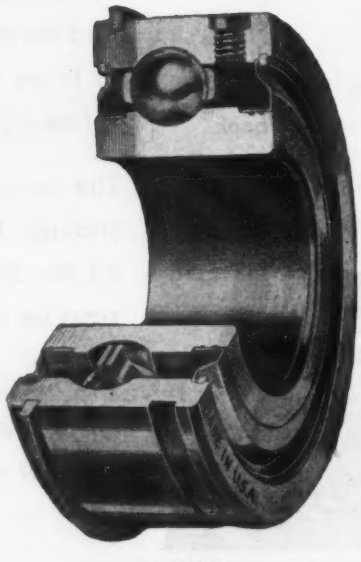
If it's a gun, you simply open the breech—insert the shell or cartridge—close the breech—and you're ready to fire.

If it's a motor or machine, you just slip the "CARTRIDGE" BEARING into its housing—assemble the housing—and you're ready for operation.

Yes—the "CARTRIDGE" BEARING is as complete and self-contained, functionally, as a rifle cartridge or gun shell—fully charged, at the factory, with a heavy load of NORMA "STABILITY-TESTED" GREASE; self-sealed against loss of lubricant or intrusion of dirt.

No fussy fitting—no loose parts—no messy grease "plumbing"—no chance for looseness—no running dry, no wear—

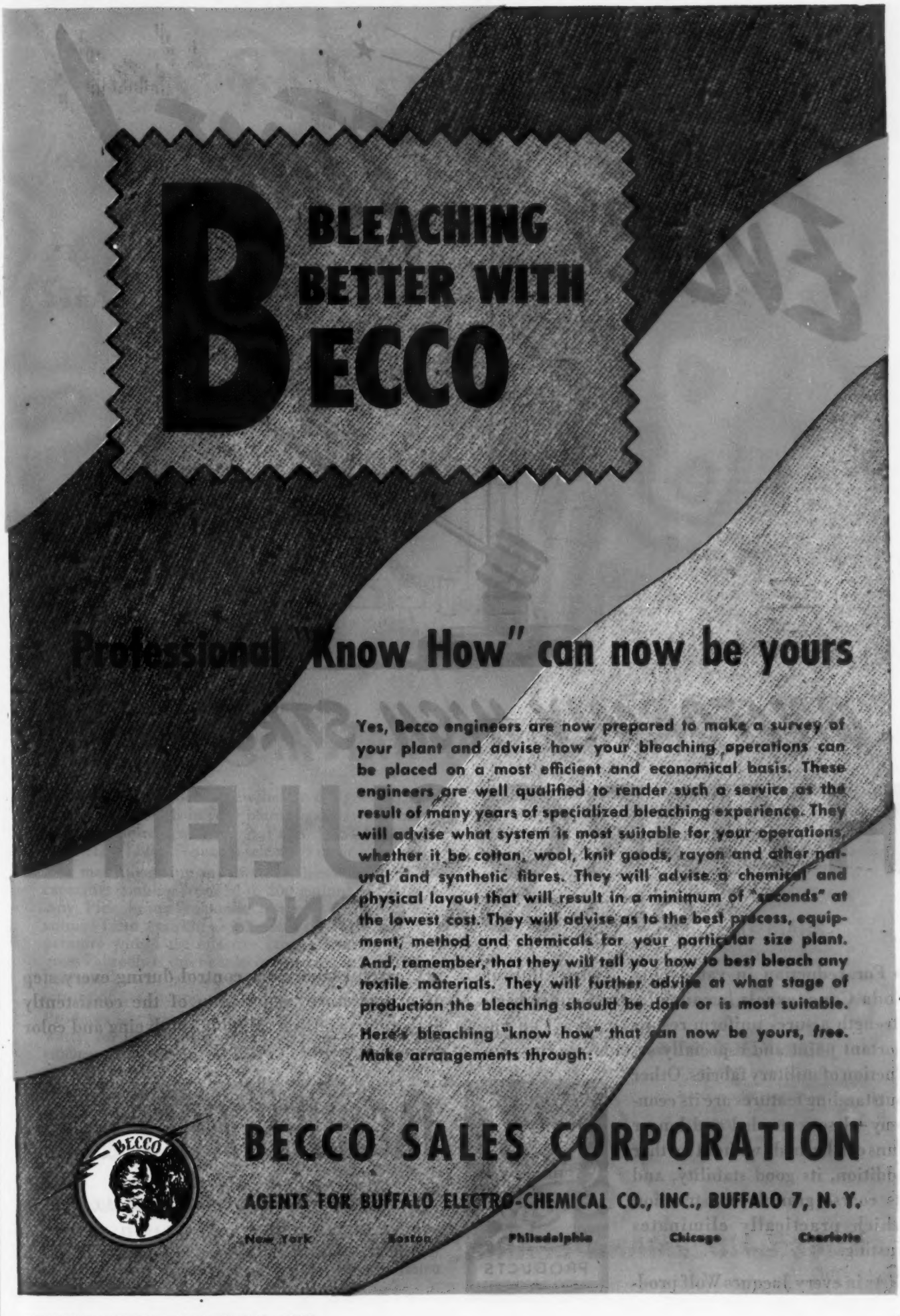
It's as simple as that!



PATENTED

NORMA-HOFFMANN BEARINGS CORP'N. STAMFORD, CONN. *Founded* 1911

Field Offices: NEW YORK • CHICAGO • CLEVELAND • CINCINNATI • PITTSBURGH • DETROIT • LOS ANGELES • SAN FRANCISCO • SEATTLE, WASH.


BLEACHING
BETTER WITH
BECCO
Professional "Know How" can now be yours
Yes, Becco engineers are now prepared to make a survey of your plant and advise how your bleaching operations can be placed on a most efficient and economical basis. These engineers are well qualified to render such a service as the result of many years of specialized bleaching experience. They will advise what system is most suitable for your operations, whether it be cotton, wool, knit goods, rayon and other natural and synthetic fibres. They will advise a chemical and physical layout that will result in a minimum of "seconds" at the lowest cost. They will advise as to the best process, equipment, method and chemicals for your particular size plant. And, remember, that they will tell you how to best bleach any textile materials. They will further advise at what stage of production the bleaching should be done or is most suitable.
Here's bleaching "know how" that can now be yours, free. Make arrangements through:
BECCO
BECCO SALES CORPORATION
AGENTS FOR BUFFALO ELECTRO-CHEMICAL CO., INC., BUFFALO 7, N. Y.
New York
Boston
Philadelphia
Chicago
Charlotte

UNIFORMLY HIGH STRENGTH

HYDROSULFITE
OF SODA CONC.

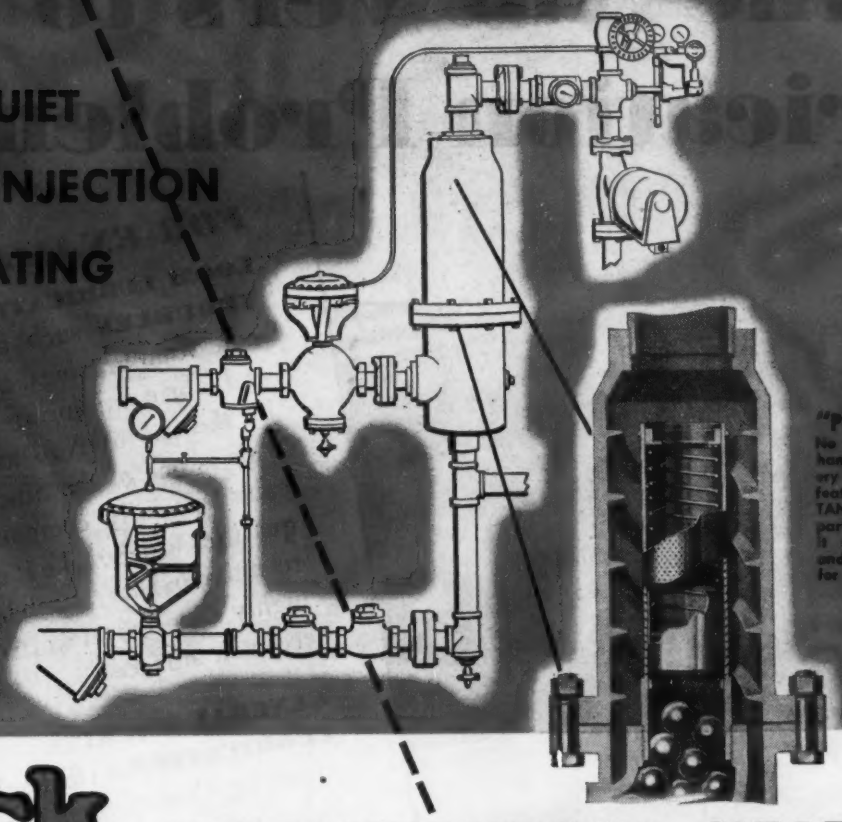
• For reduction in vat dyeing, Hydrosulfite of Soda Conc. excels because its uniformly high strength assures uniform results... always an important point and especially so today in the production of military fabrics. Other outstanding features are its economy—less is needed and longer runs can be made without further addition, its good stability, and its coarse granule construction which practically eliminates dusting.

As in every Jacques Wolf product, careful laboratory control during every step of manufacture assures you of the consistently high quality of this valuable vat dyeing and color reduction agent.

JACQUES WOLF & CO.
Chemicals **PASSAIC, N. J.**
OTHER PLANTS: CARLSTADT, N. J. • LOS ANGELES, CALIF.
WAREHOUSES: Providence, R. I., Philadelphia, Pa., Utica, N. Y., Chicago, Ill., Greenville, S. C., Chattanooga, Knoxville, Tenn.

It's the "PRESSURIZER PISTON" *for* HOT WATER *Without Noise or Hammer*

QUIET
STEAM INJECTION
HEATING



"PRESSURIZER PISTON" No objectionable noise, pipe hammering and shaking machinery because of this exclusive feature in the PICK INSTANTANEOUS HEATER. Acting as a part of the steam injection tube it stabilizes injection pressure and automatically compensates for changes in the heater load.

Pick INSTANTANEOUS HEATERS

Here is a revolutionary new heater designed to meet all hot water needs in your plant regardless of volume or temperature required. A PICK INSTANTANEOUS HEATER is "custom-selected" to fit your needs.

You may choose any one of seven sizes with maximum capacities ranging from 10 to 200 gallons per minute. Any Pick heater responds instantly to supply any volume from a trickle to full rated capacity. Any temperature within the effective range of 40 to 180 degrees Fahrenheit can be selected and maintained. Temperature can be adjusted instantly by changing the setting of the thermostat.

Produces hot water by direct injection of steam into water, no large storage tanks are required. Highest efficiency is assured... heat is transferred 100% from steam to water.

Operating on any selected steam pressure from 40 to 100 pounds, each heater comes as a complete packaged unit, pre-engineered and factory assembled ready for immediate, convenient installation.

For Complete Information and Specifications

Write PICK MFG. CO., Dept. 1703, West Bend, Wis.

● PRIMARY HEATER

Capable of supplying any specified volume of hot water up to 200 gallons per minute, this heater is practical as a primary source of hot water for countless industrial needs.

● SUPPLEMENTARY HEATER

Easy installation and accurate control at any temperature up to 180° Fahrenheit make this heater useful for specialized "spot" applications near the point of use in the plant.

● "BOOSTER" HEATER

To augment overloaded or currently inadequate facilities this heater can be installed to automatically "boost" and correct temperature deficiencies.

ARMY-E-NAVY

Pick HOT WATER HEATERS

Made by **PICK MANUFACTURING CO.**
WEST BEND, WISCONSIN, U. S. A.

SINCLAIR has the Answers to Your Lubrication Problems

FOR EXAMPLE:

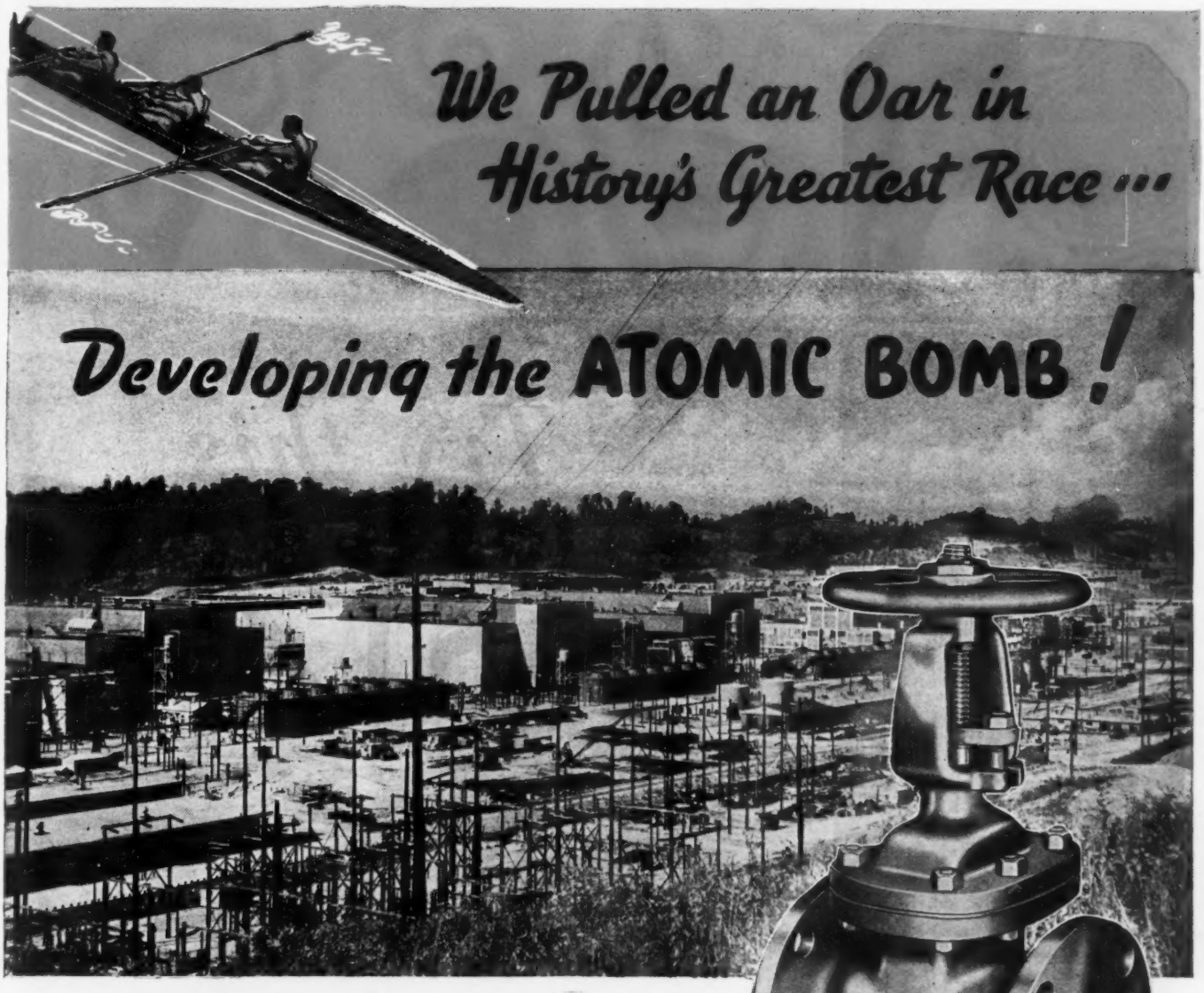
LOOM LUBRICATION TROUBLES such as drip and ooze from bearings, creep, splash and fabric staining are eliminated by the use of No-Drip No. 12. This is one of the Sinclair lubricants specially compounded for qualities which make it extremely retentive in leaky comb boxes and highly adhesive on worn cam and eccentric surfaces.

GENERAL MACHINE LUBRICATION is efficiently provided by Commander Oil B, a highly refined straight mineral oil designed to be fully dependable for general purposes.

• **By following the Sinclair Textile Flow Chart and Lubrication Guide, mill operators are able to simplify lubricant inventory, and dispensing and storing of oils and greases. Chance of error in application is eliminated and savings in power, down time and replacement costs can be effected. The chart will show you a specially designed Sinclair Lubricant for every textile machine requirement. Write for a copy, today. It's free.**

SINCLAIR TEXTILE LUBRICANTS

FOR FULL INFORMATION OR LUBRICATION COUNSEL WRITE SINCLAIR REFINING COMPANY, 630 FIFTH AVENUE, NEW YORK 20, N. Y.



A view of one of the gigantic production areas at the Clinton Engineer Works at Oak Ridge, Tenn.

If Germany had beaten our scientists to the completion of the atomic bomb, even in the final days of the war, world history would have been changed. In this fateful race, Alloy Steel Products was called upon to play a part as a supplier to *Manhattan District,* at Clinton Engineer Works.

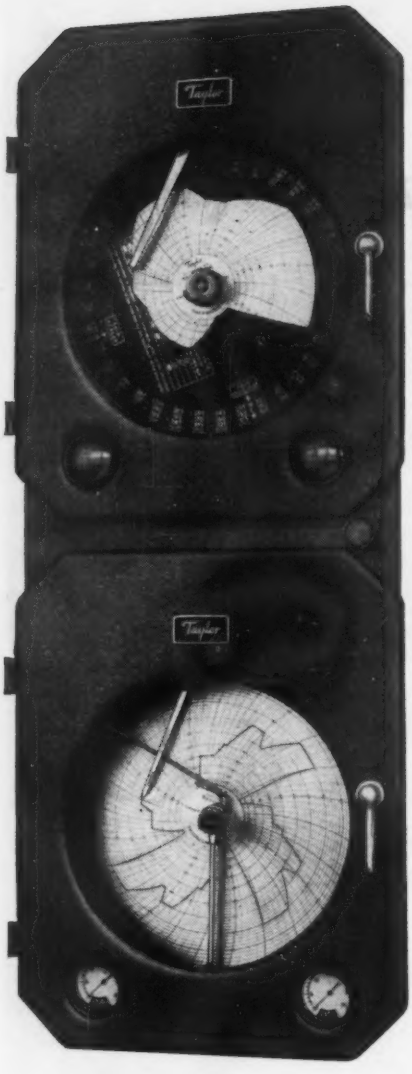
That Aloyco came through on time is recognized in a letter from Lt. Col. A. C. Johnson of the Corps of Engineers, Manhattan District, who said: "I want to take this opportunity to extend to you our deep gratitude for the very excellent job Alloy Steel Products Company did and is doing for us. It was only through the wholehearted cooperation of industry that the job was done in the phenomenal short period of three years. You have every reason to be proud of the performance of your company in behalf of Manhattan."

ALOYCO

Stainless Steel
VALVES and FITTINGS

GATE VALVES • GLOBE VALVES
Y VALVES • CHECK VALVES
LEVER THROTTLE GATE VALVES
TANK VALVES • SCREWED FITTINGS
FLANGED FITTINGS
GAUGE GLASS FITTINGS

Alloy Steel Products Company, Inc. 1304 West Elizabeth Avenue, Linden, N. J.



Try this for SIZE!

TAKE a tip from textile mills who have been meeting Uncle Sam's exacting requirements for military textiles. Let a Taylor Fulscope Time Schedule Controller run your entire size cooking operation!

By "entire", we mean literally the whole job except for loading the kettle. You push a button —Taylor Accuracy does the rest!

Operators report savings in starch, sizing compounds, steam, and time. They say there's less waste because the Time Schedule Controller won't let a kettle boil over! And most important of all, they say they get more uniformly sized yarn.

Both control and cam and trip mechanisms are easy to get at because of its special dual case construction. Let your Taylor Field Engineer show you how it works. Taylor Instrument Companies, Rochester, N. Y., and Toronto, Canada. *Instruments for indicating, recording and controlling temperature, pressure, humidity, flow and liquid level.*

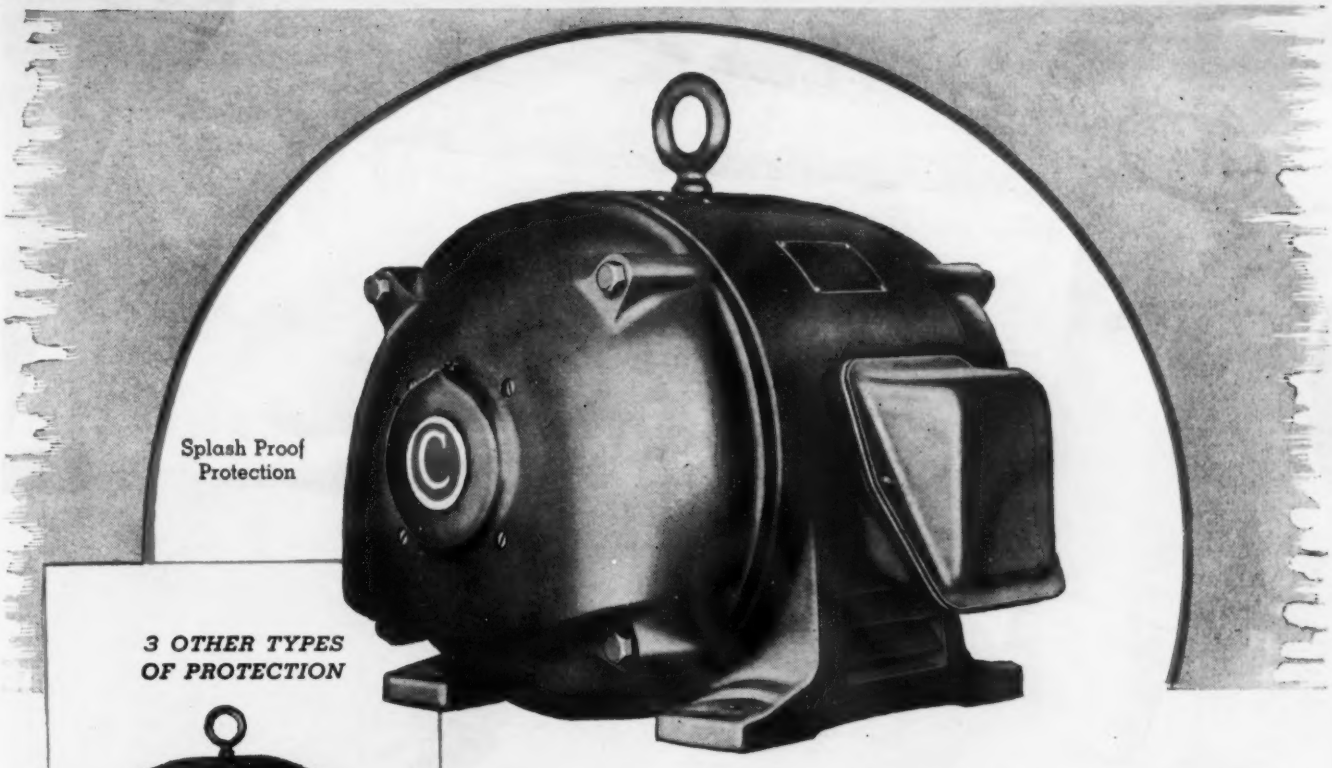
ARMY NAVY

Taylor Instruments

MEAN

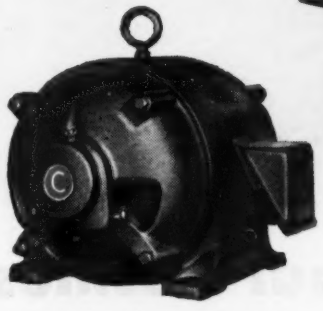
ACCURACY FIRST

IN HOME AND INDUSTRY

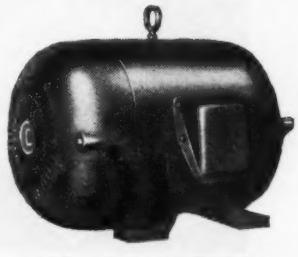


Splash Proof Protection

3 OTHER TYPES OF PROTECTION



Form J — General Purpose Application



TEFC — Protects Against Destructive Dust, Grit, Powdered Materials

Century Explosion Proof Motor

Where There Are Splashing Liquids

Guard Against Production Losses With CENTURY SPLASH PROOF MOTORS

Whether yours as an installation is subjected to splashing liquids — or whether your electric motors must withstand plant washdowns — Century Splash Proof motors will give you protection.

Of course, any falling solids are also kept out of the operating parts of the motor by Century's proven splash proof construction.

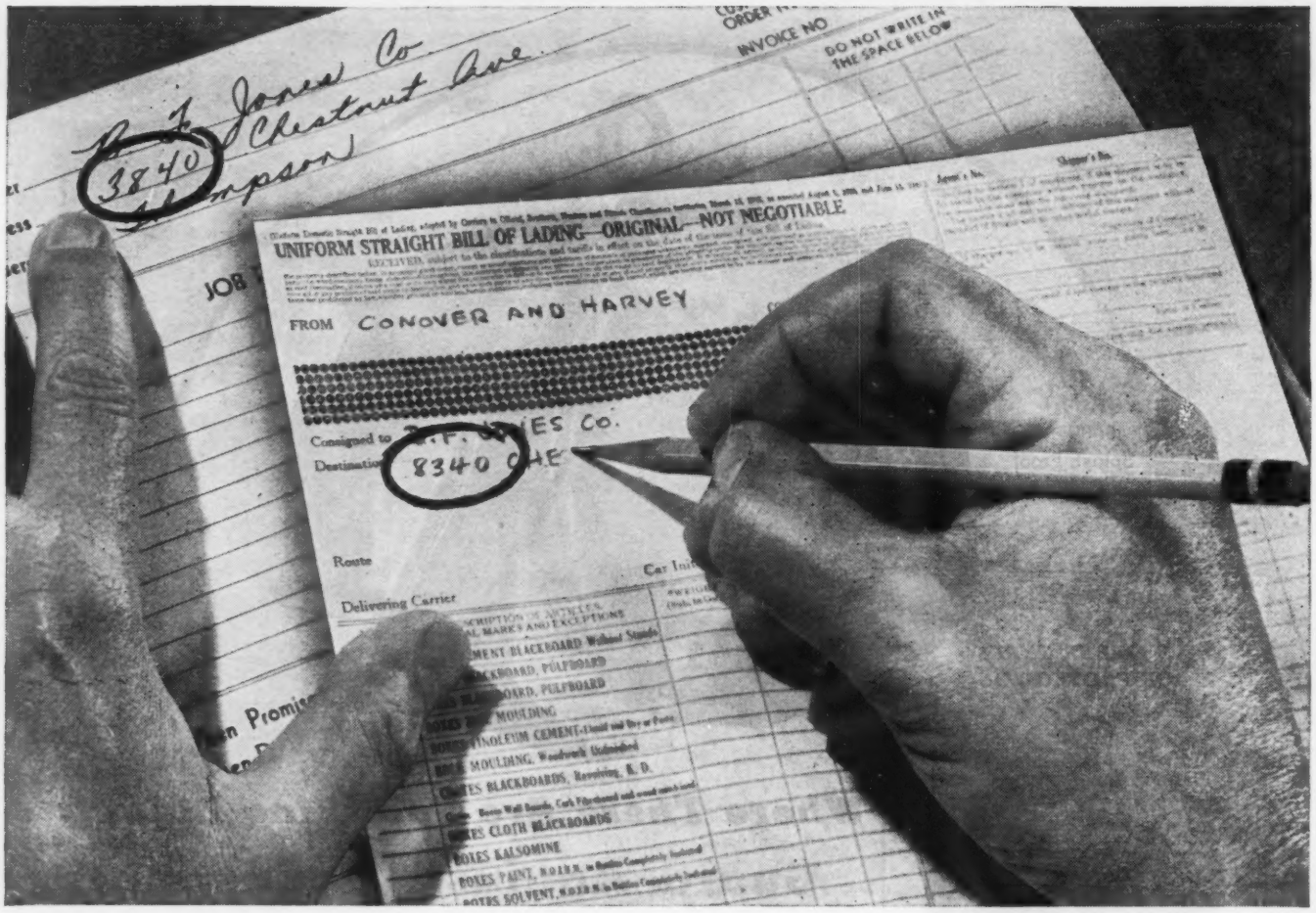
Special insulation is available for higher concentrations of acids and alkalies.

Wherever your electric motors must operate in conditions such as these, for safety's sake, specify Century Splash Proof. A Century engineer will be glad to give you complete details about the advantages of Century motors as they apply to your job.

Century C MOTORS

CENTURY ELECTRIC CO.
1806 Pine Street, St. Louis 3, Missouri

Offices and Stock Points in Principal Cities



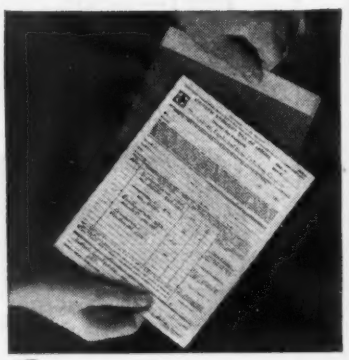
Can You See This ERROR in Your Business?

• Most likely, you have run across errors of a similar nature—a hurried glance, the pencil mistaking the position of the 8 and 3. Errors that mean a costly checking and re-checking to find the cause later on—a job that costs in time and money.

Yet such errors are needless—can easily be eliminated by the use of the right forms. Forms that allow *one* person at *one* time to write all the needed copies—forms with fresh interleaved carbons that assure instant readability—forms such as those Uarco brings to the business world.

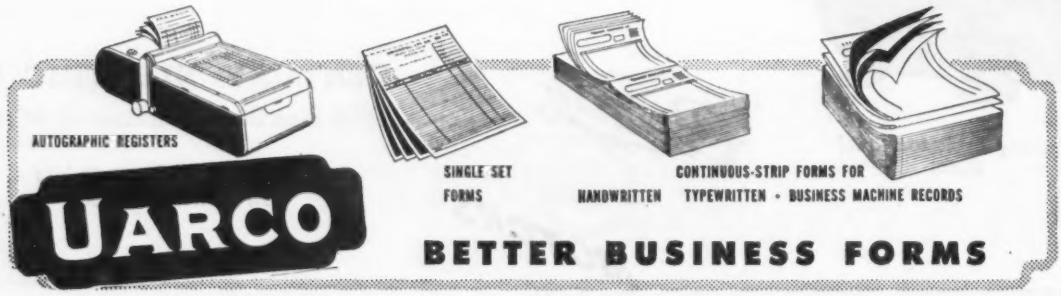
Creating better forms is Uarco's business—scientifically designing forms that keep business procedure moving smoothly—prefabricating paper and carbons into forms that mean time and money saved.

Have a Uarco representative call on you today. It will cost you nothing and may well result in cutting the number of errors in your business records. Or for detailed information—write us today.

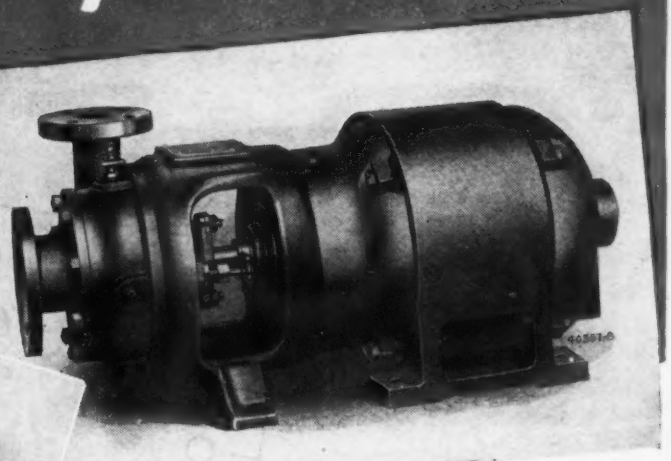


For instance: **The Uarco E-Z-Out forms are one of many types of time-saving and error-cutting business forms. For use in typewriter or for handwritten forms, they have carbons interleaved and come ready aligned. Up to as many as 20 copies can easily be made by typewriter or 5 by hand. Write for complete information.**

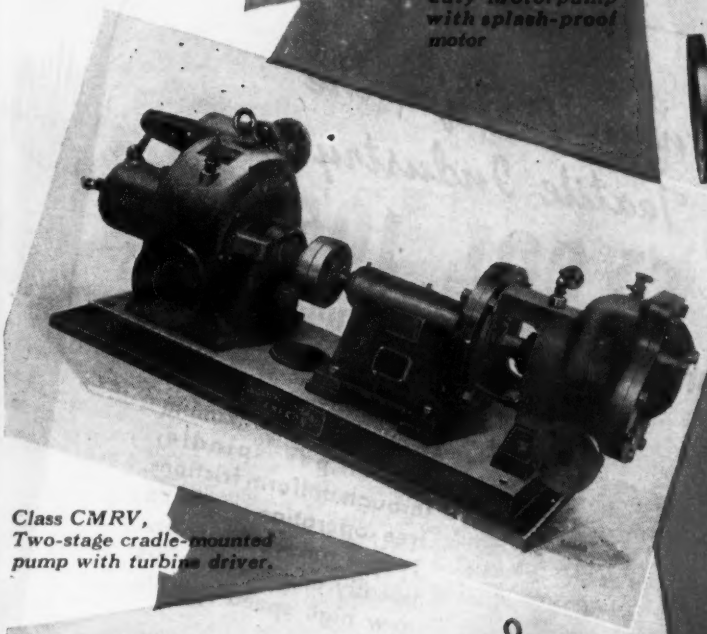
UNITED AUTOGRAPHIC REGISTER COMPANY
Chicago, Cleveland, Oakland • *Offices in All Principal Cities*



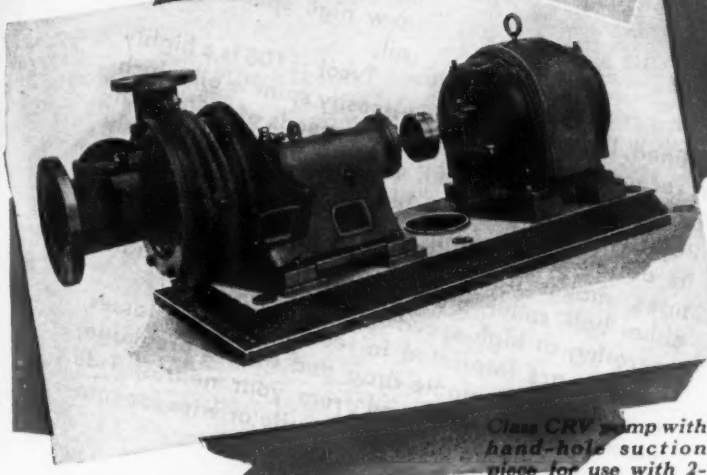
So you need a Special PUMP



Class RV, heavy-duty Motorpump with splash-proof motor



Class CMRV, Two-stage cradle-mounted pump with turbine driver.



Class CRV pump with hand-hole suction piece for use with 2-vane open impellers.

That's right, there are many jobs that require pumps with special features—perhaps an open impeller, a smothering-type stuffing-box gland, shrouded casing rings, a portable mounting, etc.

Do you know that you can often have just the special features you need on a pump from the Motorpump line...have these features without costly alterations, without extending delivery and without impairing normal performance of the unit.

Motorpumps are built to take a wide selection of drivers. They are available in iron, steel, bronze, or bronze-fitted construction.

Let an Ingersoll-Rand engineer tell you more about these pumps. He will be glad to give you a copy of Bulletin 7093. This contains complete descriptions, illustrates many of the modifications, gives selection tables, dimensions, weights and other essential details.

THE CAMERON

MOTORPUMP

AN INGERSOLL-RAND PRODUCT

COMPRESSORS · AIR TOOLS · ROCK DRILLS
TURBO BLOWERS · CONDENSERS
CENTRIFUGAL PUMPS
OIL AND GAS ENGINES

Ingersoll-Rand

CAMERON PUMP DIVISION
11 BROADWAY, NEW YORK 4, N. Y.

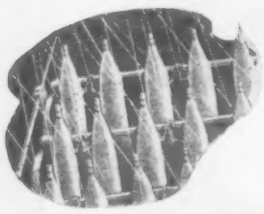
9-709

S-M-O-O-T-H PERFORMANCE...

Engineered for the Textile Industry

TYCOL #105

...for high speed spindle lubrication



To promote maximum output per spindle, through uniform friction-free operation — that's Tycol's reason for scientifically engineering this new high speed spindle oil.

Tycol #105 is a highly refined, light colored, low viscosity spindle oil which is recommended where spindle speeds of 7,500 rpm or higher are obtained. Its extremely high Flash Point, and marked resistance to oxidation — plus its ability to maintain body under high temperatures, makes it a truly outstanding lubricant for either ball, roller, plain or bath lubricated spindles operating at high speed.

If you are interested in reducing bolster losses, in eliminating spindle drag and thread breakage, learn about this new oil from your nearest Tide Water Associated office. Call, write or wire for complete information today.

DRUMS! DRUMS! DRUMS!

War needs make it imperative that all empty drums be returned immediately.

TYCOL INDUSTRIAL

ENGINEERED FOR EVERY

M-A-X-I-M-U-M EFFICIENCY

with TYCOL

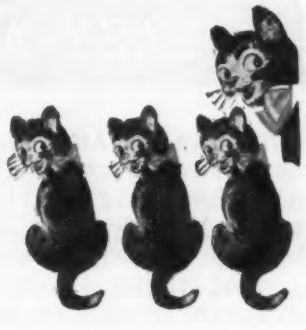
ENGINEERED LUBRICATION

Under all conditions the proved performance of Tycol lubricants more than meets their recommended service.

Rigidly controlled and tested during manufacture . . . and refined from the highest grade crudes, Tycol oils and greases (whether straight mineral or compounded) retain their uniformity* within each classification – from the first drum to the last. This unvarying high quality, plus the scope of the line, accounts for Tycol's wide acceptance among operators interested in maximum production . . . top efficiency . . . lowest operating cost.

Whatever your lubrication need, there is a Tycol oil or grease expressly engineered to afford greater economy . . . longer machine life for every type of equipment. Let a Tide Water Associated engineer help you select the best one for your particular need. Call, write or wire your nearest Tide Water Associated Office for full details.

Makers of Famous Veedol Motor Oil



* **UNIFORMITY.** For clear, concise descriptions of the basic tests used to determine important lubrication properties —•Pour Point, Extreme Pressure, Uniformity and many others – consult Tide Water Associated's informative handbook "Lubricania". For your FREE copy write: Tide Water Associated Oil Company, 17 Battery Place, New York 4, N. Y.

LUBRICANTS
SERVICE NEED

TIDE WATER ASSOCIATED OIL COMPANY
17 BATTERY PLACE · NEW YORK 4, N. Y.

PRINCIPAL OFFICES
BOSTON · PHILADELPHIA
PITTSBURGH · CHARLOTTE, N. C.

QUICK QUIZ:

Are you all at sea about these problems?

Eliminating static electricity that causes thread or yarn to be weak and fuzzy?

Holding the correct conditions for each manufacturing process?

Controlling physical properties of yarn for smooth running?

Obtaining uniform dimensions in knitted articles, such as nylon stockings?

Cooling your mill for maximum efficiency of workers?

EASY ANSWER:

WITH CARRIER AIR CONDITIONING you can chart a straight course out of all these difficulties! Textile mills have known Carrier dependability and efficiency for 39 years ...and today all this accumulated experience can be brought to bear on your current and future problems. Through its many wartime responsibilities, Carrier has made remarkable progress in the design of new equipment. Let our engineers show you what can be done with your postwar needs for air conditioning, refrigeration and unit heating. Write fully.

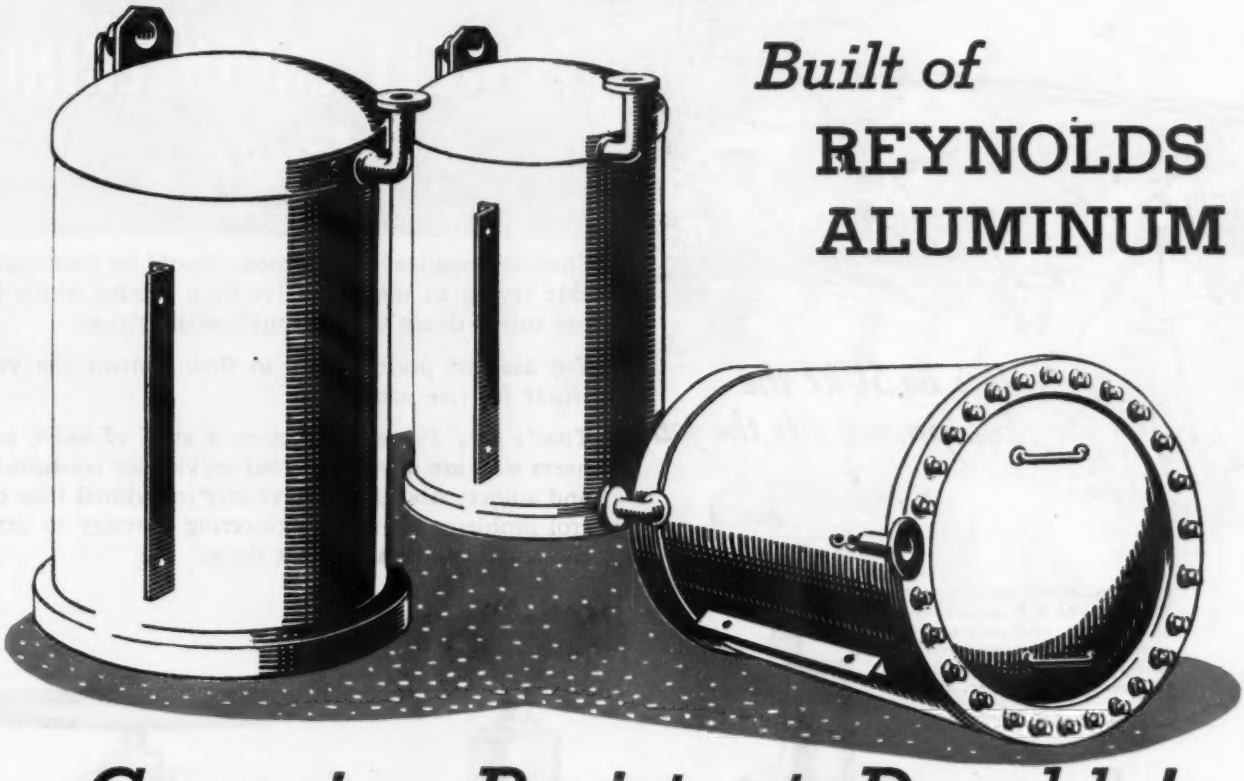
Carrier Corporation, Syracuse, N. Y.

Carrier

AIR CONDITIONING • REFRIGERATION
INDUSTRIAL HEATING

How UP-TO-DATE are you on ALUMINUM?

SPECIFY TANKS



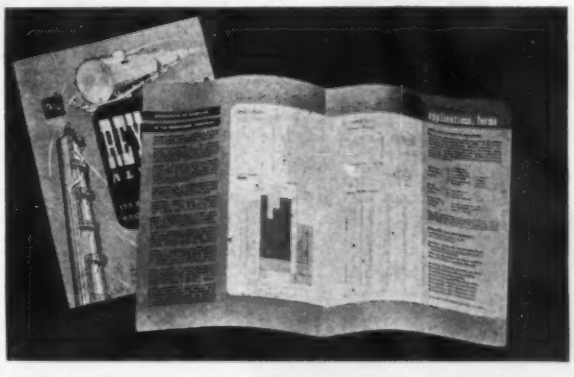
Built of
REYNOLDS ALUMINUM

Corrosion-Resistant, Durable!

CONSIDER ALUMINUM . . . First, for its strength and weight-saving! Through the use of Reynolds Aluminum, tanks can be made lighter...a saving reflected in lowered construction costs as well as reduced floor loads.

Next...Consider aluminum for corrosion-resistance! Take cellulose acetate production, for example: Here tanks made of aluminum have been used for many years in the manufacture of textiles. Due to superior corrosion-resistance, aluminum aids in preventing stains and discoloration of products.

Whatever your interest... Reynolds technicians are eager to work with your engineers. Offices in principal cities. Phone the nearest office—or write Reynolds Metals Co., Aluminum Division, 2535 South Third Street, Louisville 1, Kentucky. Consider Aluminum . . . **CONSULT REYNOLDS.**



See Reynolds catalog in Sweet's...or write for Catalog 102... "Reynolds Aluminum. Its New Importance in Processing Operations."

REYNOLDS METALS

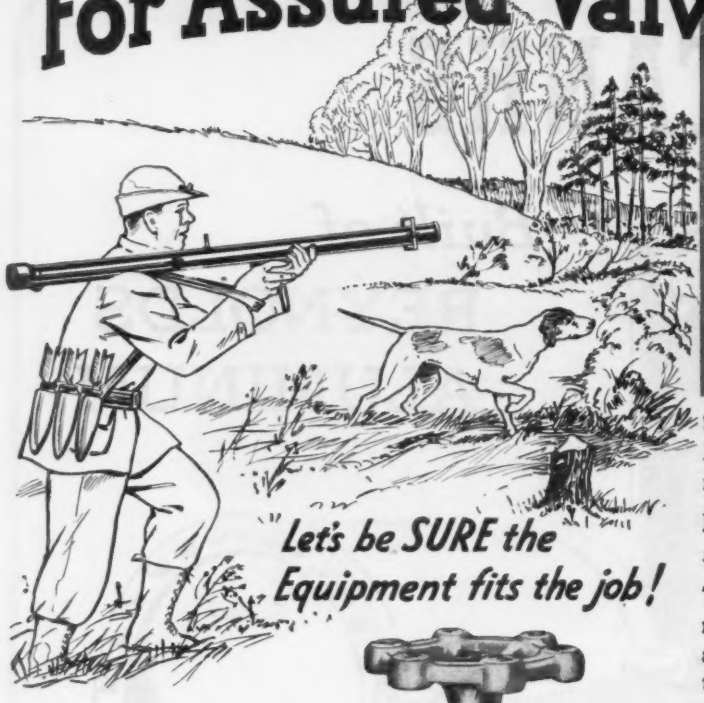
REYNOLDS ALUMINUM

The Great New Source of

INGOT • SHEET • SHAPES • WIRE • ROD • BAR • TUBING • PARTS • FORGINGS • CASTINGS • FOIL • POWDER

For Assured Valve Performance

Consult POWELL ENGINEERING *first*



Shooting quail with a bazooka would be nonsensical. But trying to make a valve do a job for which it is not suited doesn't make much sense, either.

For assured performance in flow control the valve *must fit the job.*

That's why Powell maintains a staff of valve engineers who are always at your service for consultation and advice. And if you have any individual flow control problems, Powell Engineering is ready to design the correct valves to meet them.

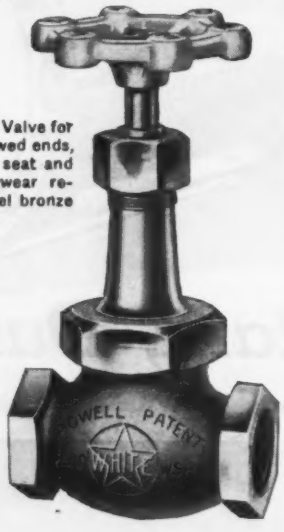


Fig. 1708—Bronze Globe Valve for 200 pounds W. S. P. Screwed ends, union bonnet, renewable seat and regrindable, renewable, wear resisting "Powellium" nickel bronze semi-cone, plug type disc.

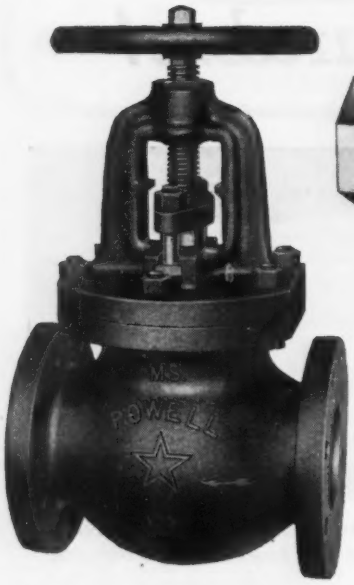


Fig. 241—Iron Body Bronze Mounted Globe Valve for 125 pounds W. S. P. Flanged ends, outside screw rising stem, bolted flanged yoke and regrindable, renewable bronze seat and disc.

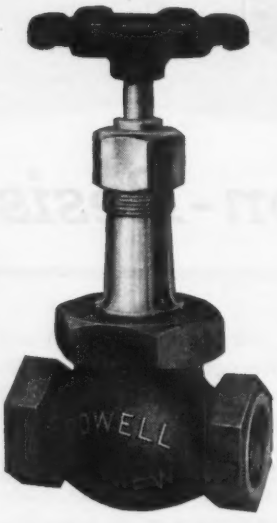


Fig. 190—Iron Body Bronze Mounted Globe Valve for 150 pounds W. S. P. Screwed ends, union bonnet and regrindable, renewable, wear resisting "Powellium" nickel bronze seat and disc.

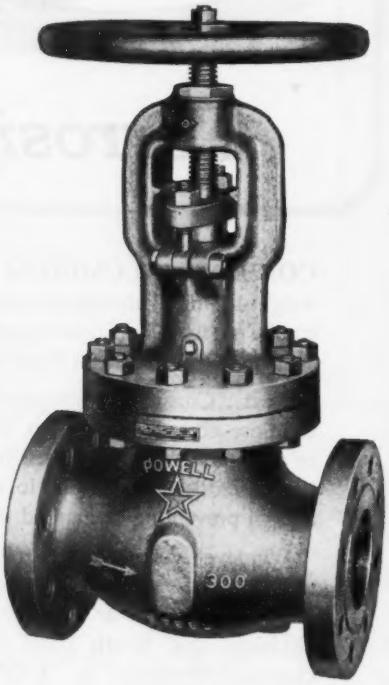


Fig. 3031—Class 300-pound Cast Steel Globe Valve. Flanged ends, outside screw rising stem and bolted flanged yoke.

The Wm. Powell Co.

Dependable Valves Since 1846

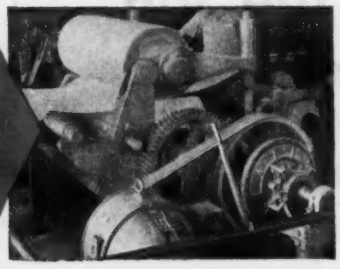
Cincinnati 22, Ohio

DISTRIBUTORS IN PRINCIPAL CITIES

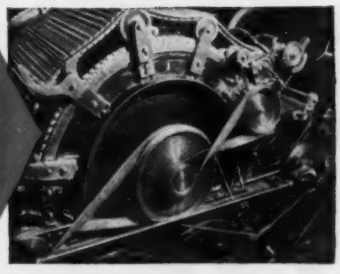
POWELL VALVES

For every drive in every type of mill...

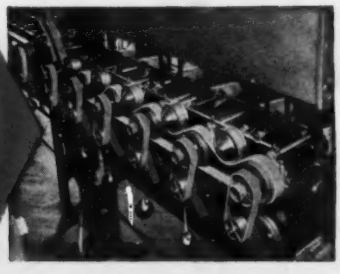
Gilmer BELTS



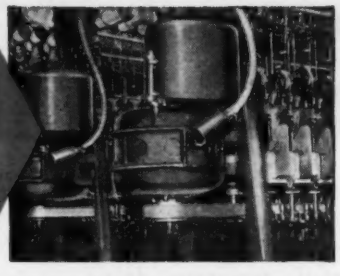
GILMER V-BELTS—Flat and Multiple. Space saving, silent, shock absorbing. Built to lock in the grooves with a non-slip grip. In standard and special sizes.



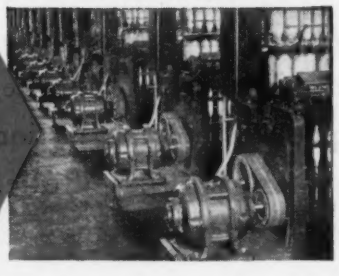
GILMER KABLE KORD LICKERIN BELTS. A contactor and power belt in one. Noted for exceptional grip, low stretch, small slippage and high tensile strength. Stand up long in service.



GILMER HEVALOID GAINER BELTS. Made under Hevaloid patent with Neoprene compound, which provides a high coefficient of friction. For precision work at 9000 f.p.m. Resist oil, heat, stretch and slippage.



GILMER ENDLESS CORD SPINNER BELTS. Built with continuous cord construction to assure smooth and uniform spindle speed. A belt of high tensile strength, low stretch and long life.



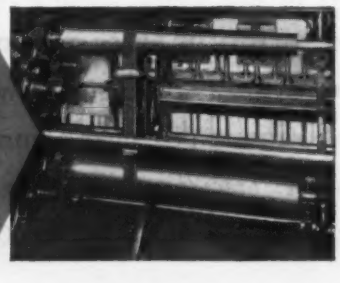
GILMER KABLE KORD BELTS AND BELTING. Meet practically every flat, power belt need. Endless and non-endless, "two belts in one"—contactor and power. Tight gripping, hard pulling, long wearing.

Years of close association with every branch of the textile industry have equipped Gilmer engineers with an intimate knowledge of its widely varied belting needs. This experience is incorporated in the extensive line of Gilmer Belts for textile mills.

There are Gilmer V-Belts, flat belts, round belts . . . endless and non-endless . . . standard and specially treated . . . and they range from large, heavy-duty belts to small, high-speed belts for operation on small pulleys and short center drives. Each Gilmer Belt conforms to the latest advancements in power transmission engineering. Thus, whatever the drive, you can use Gilmer Belts with assurance of maximum power, dependable service and long life.

If you have a belting problem, let Gilmer engineers help you to solve it. They gladly offer their services without charge or obligation.

OTHER GILMER BELTS include Endless Round Belts for carding machines, and other belts for special textile application. All are completely described in the handbook, "Gilmer Belts for the Textile Industry"—a book that simplifies the specifying of belts for a large majority of drives. Write for your FREE copy today.



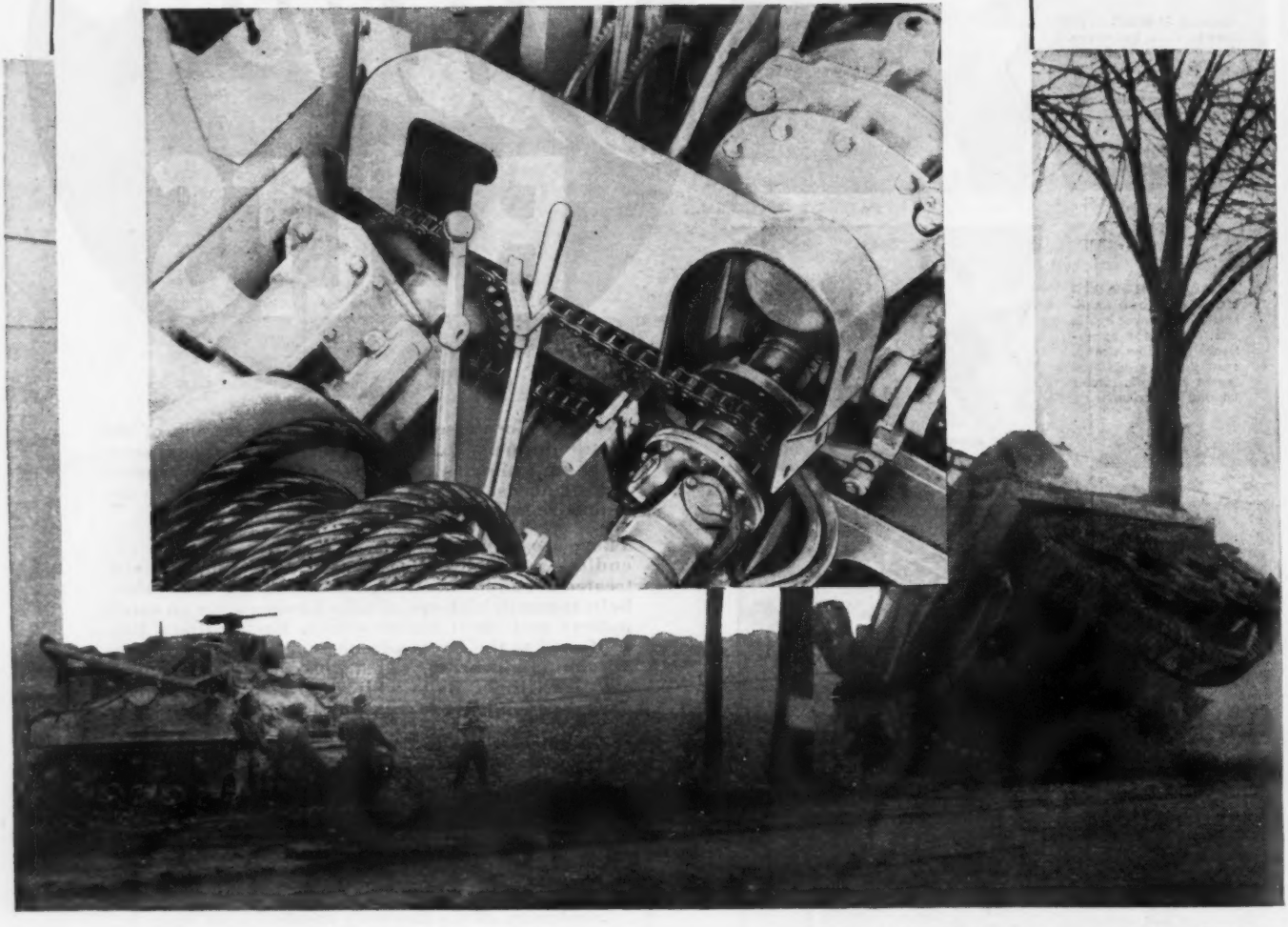
GILMER CONE DRIVE BELTS. Reinforced multiple jacket edges and rubber-locked internal structure check wear and unraveling from the action of shifter forks. Assure longer life in the toughest service.

L. H. GILMER COMPANY

TACONY, PHILADELPHIA 35, PA.
Division of United States Rubber Company

WHITNEY ROLLER CHAINS

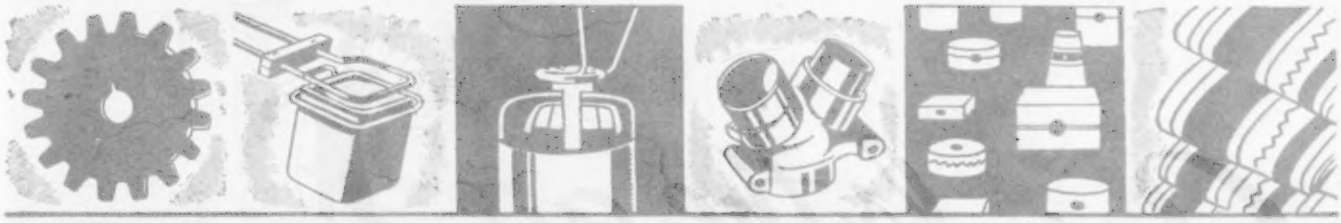
Are Helping to Finish the Job



Whitney-equipped tank recovery unit pulling a burnt-out German tank off the road near Karpen, Germany.

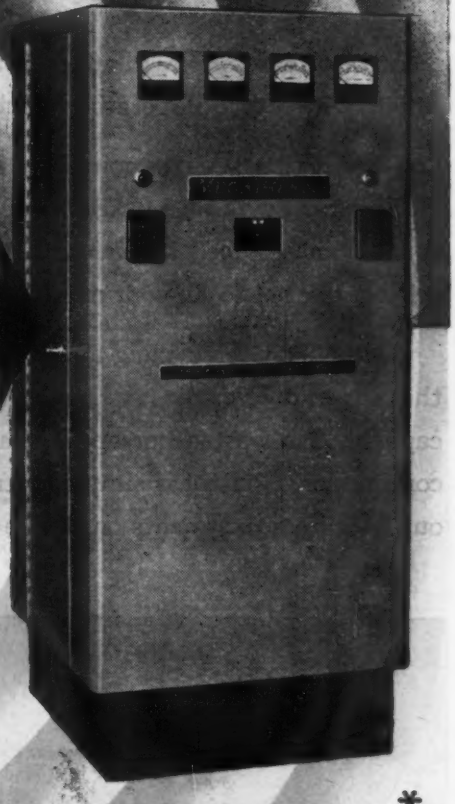
Whitney Roller Chains, still pulling for victory on every remaining battle front, are assuming their well-earned position in post-war planning. Built with *precision* parts, accurately joined, Whitney Roller Chains insure powerful, positive drive — delivery of full rated machine capacity. For uninterrupted top performance, plan to equip *all* your production machines with Whitney Roller Chain drives. Write for catalog.

The WHITNEY CHAIN & MFG. CO., Hartford 2, Connecticut



heat

induction or dielectric



WHEN you need it
WHERE you need it
*FAST with MEGATHERM**

Ready . . . at the push of a button . . . MEGATHERM's megacycle energy puts heat *where* you want it . . . instantly!

***Induction* . . . for thin-skin and contour hardening, annealing, brazing and soldering. Ferrous and non-ferrous metals quickly processed!**

***Dielectric* . . . for uniformly heating plastic materials, rubber, food, drugs, wood, textiles and cosmetics . . . rapid defrosting of frozen food!**

There's a MEGATHERM to fit your need . . . and a MEGATHERM Electronic Application Engineer to show you how MEGATHERM electronic heat can help you do a better job . . . build a better product.

Write on your company letterhead *today* for details.

FEDERAL TELEPHONE & RADIO — FTR

Federal Telephone and Radio Corporation

AN IT&T ASSOCIATE

Newark 1, N. J.

*REG. U. S. PAT. OFF.

Controls the air

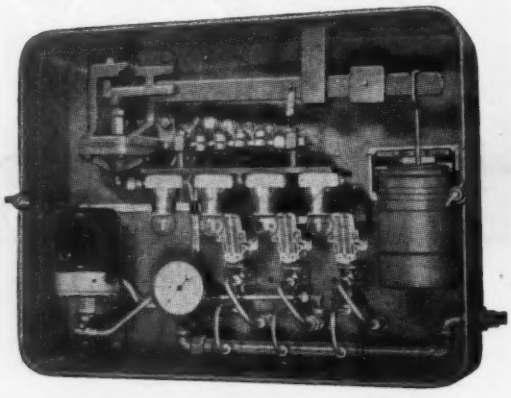
...TO FIT YOUR NEEDS!

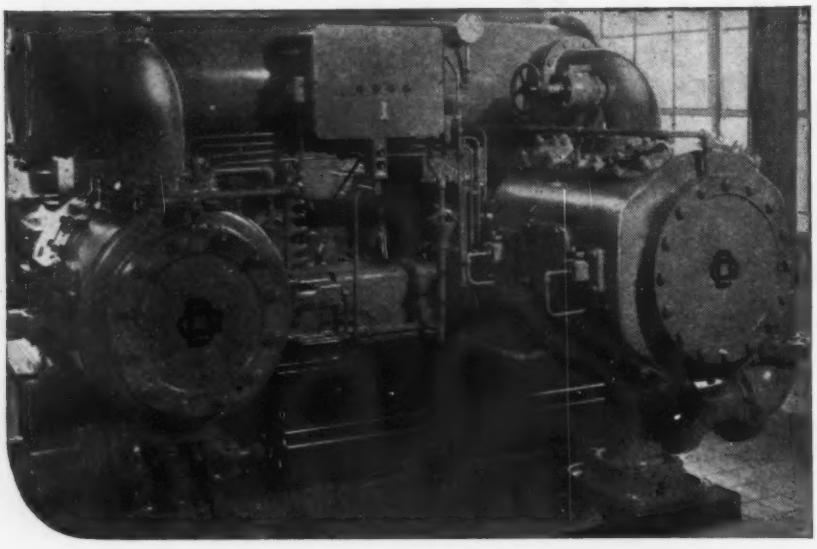
Control of the air—regulation of the flow. Here is a vitally important factor in operating efficiency of a compressor.

You get that positive control in the Gardner-Denver "HA" Horizontal Two-Stage Compressor. Designed for heavy duty, continuous service, the air output of the "HA" is automatically regulated to fit your needs.

Class M-25CS recycling five-step capacity control regulates the output in five steps . . . 100%, 75%, 50%, 25% and 0% of capacity. No wasted horsepower, no unnecessary wear on the compressor. Control is simple, extremely sensitive and without delicate adjustments or fragile parts.

Five-step recycling control.



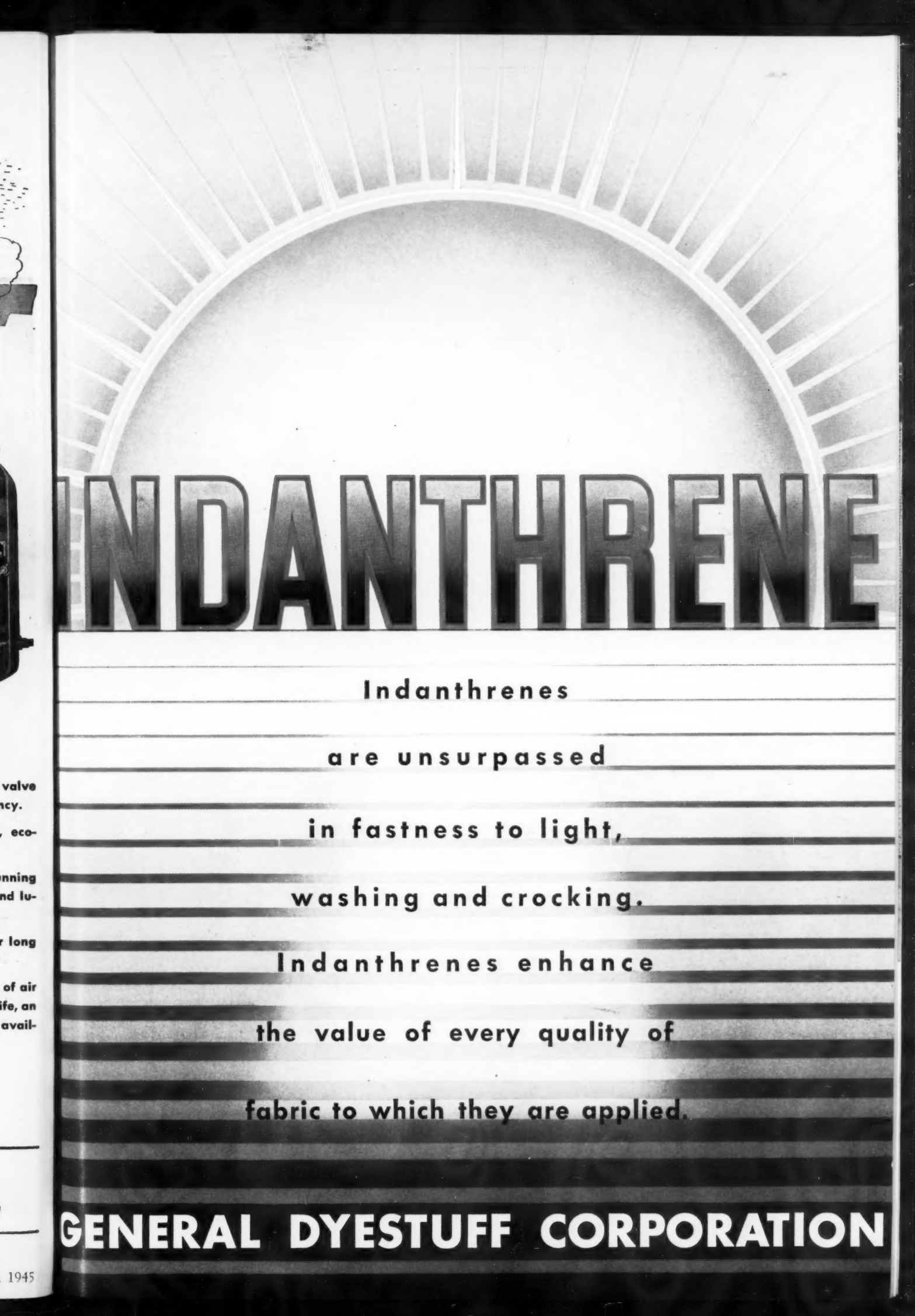


Other "HA" Features

1. Unrestricted air passages and large valve and port areas for greater air efficiency.
2. Timken main bearings for smooth, economical operations.
3. Large water-jacket areas for cooler running . . . lower discharge temperatures and lubricating economy.
4. Rugged, heavy-duty construction for long life and continuous service.
5. To reduce heat and moisture content of air further, for maximum hose and tool life, an efficient "Clean Air" after-cooler is available as additional equipment.

For complete information on the "HA," send for descriptive bulletin. Gardner-Denver Company, Quincy, Illinois; Atlanta, Ga.; Birmingham, Ala.; Boston, Mass.; Hazleton, Pa.; Knoxville, Tenn.; Washington, D. C.; New York, N. Y.; Philadelphia, Pa.; Pittsburgh, Pa.

GARDNER-DENVER *Since 1859*


INDANTHRENE
Indanthrenes
are unsurpassed
in fastness to light,
washing and crocking.
Indanthrenes enhance
the value of every quality of
fabric to which they are applied.
GENERAL DYESTUFF CORPORATION

Confidence —

Manufacturers may face the post-war adjustment period with greater confidence, if supported by the financial and credit services of a strong factoring organization.

Factoring enables a manufacturer to retain his own capital funds in his own business, instead of providing capital for the customers who buy his products; — at the same time factoring provides for such customers the usual credit terms on their purchases.

The factor assumes all risks of credit losses, and makes available immediately in cash, the net value of shipments as made.

Wider distribution and greater sales volume can be attained through factoring, without risk of credit losses, and on less invested capital.

INQUIRIES INVITED

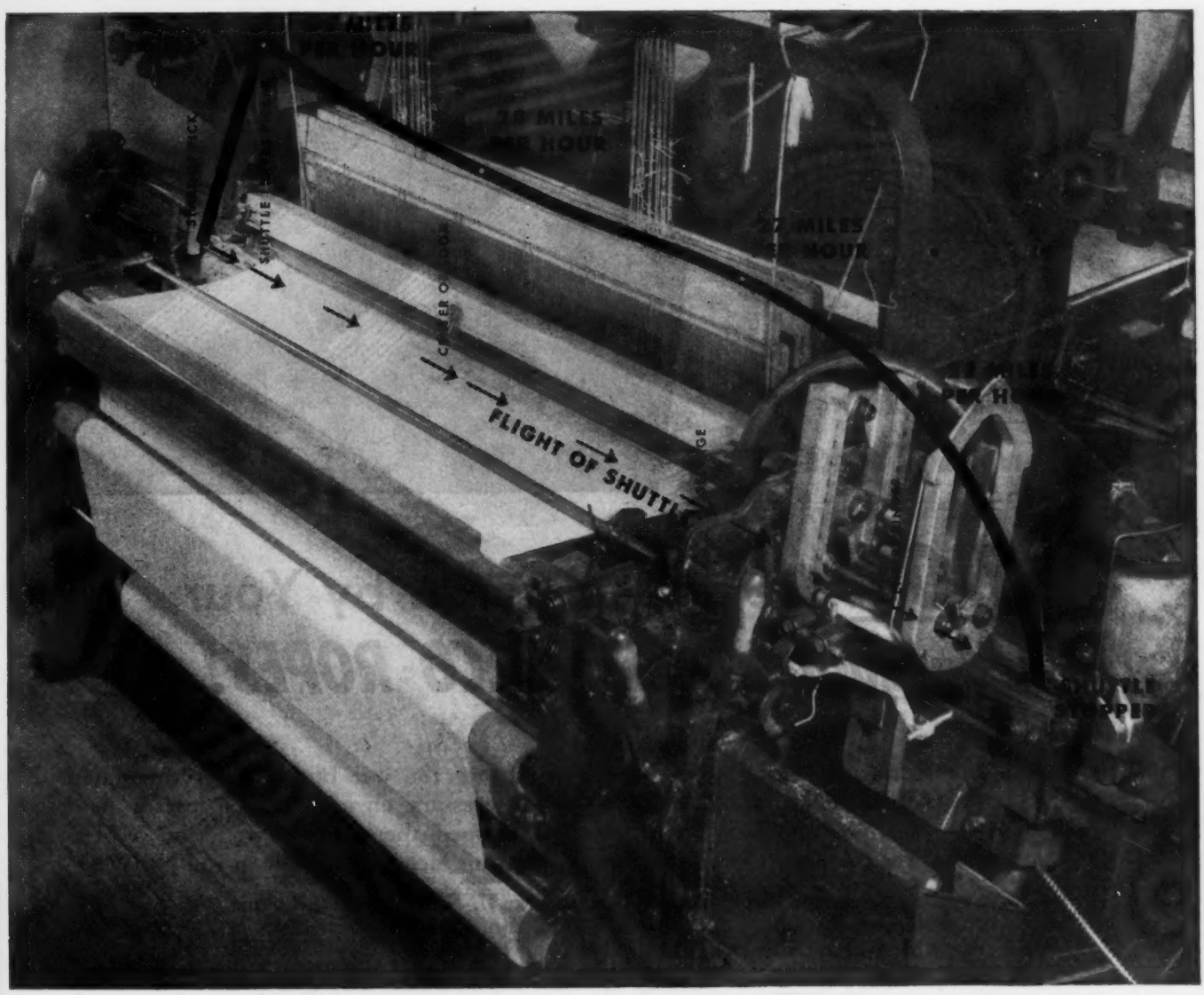
John P. Maguire & Company

INCORPORATED

Factors

ASHland 4-4141

370 FOURTH AVENUE, NEW YORK, 10, N.Y.



Here's one answer to the question:

"What's the Speed of a Loom Shuttle?"

That curve, just above, tells a startling story. It shows the shuttle starting from rest at the left of a dobby loom—*and reaching a maximum velocity of 34 miles per hour in 1/30th of a second!* This acceleration, from rest to 34 miles per hour, is reached within a distance of 10 inches.

It also shows that, at 172 picks per minute, the shuttle completes its travel from box to box in a little less than 1/5 of a second. And in that time it decelerates sharply as it enters the selvage of the fabric—and again as it contacts the binder. Then the shuttle comes to a dead stop and the operation is almost instantly repeated in the opposite direction. So there's one illuminating answer to the question: "What's the speed of a shuttle?"

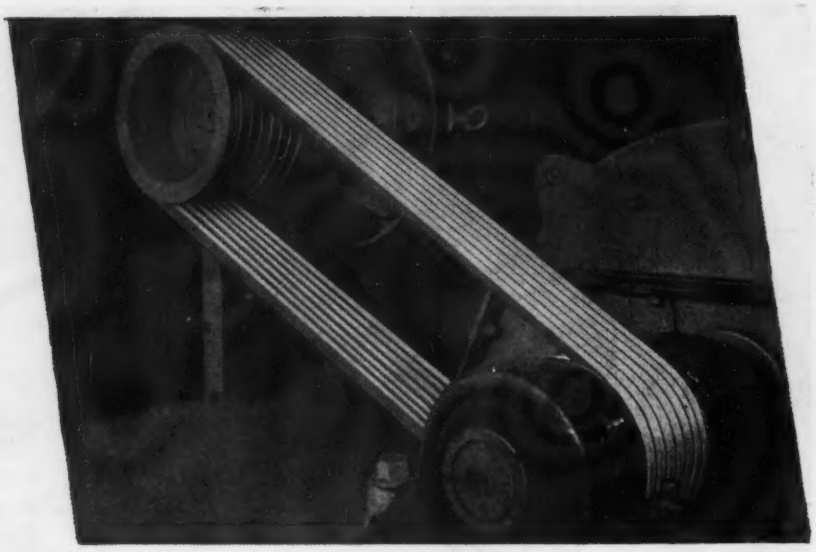
Now, to the next question: "How much faster can you make it go?", the answer is never exact or final.

For C & K engineers have steadily increased shuttle-speeds. And they are always working to move these speeds up, *and up,* with the single thought of making it possible for *you* to roll out more and more yardage, of higher and higher quality, in shorter and shorter time.

Crompton & Knowles Loom Works

WORCESTER 1, MASSACHUSETTS, U. S. A.
PHILADELPHIA, PA. • CHARLOTTE, N. C. • ALLENTOWN, PA.

between Today's War Weapons . . .
and their New Uses in Tomorrow's Looms



No "Pre-War" Belts EVER Gave the Service that is

NOW Being Delivered by Your Standard GATES VULCO ROPES!

Here is the Reason:— Good belts were built before the war but none of them had the strength and durability found necessary on army tanks, tractors and self-propelled big guns. Gates developed these greatly superior V-belts for combat service—and here is why this fact is important to you NOW:—

Every improvement developed by Gates for U. S. combat units has been added, day by day, to the quality of the standard Gates Vulco Ropes which have been delivered to you.

Here is one rare instance in which improvements developed primarily for army combat use can be passed on to you immediately—and there are, of course, good reasons why Gates has not been called upon to withhold these important improvements from industrial V-belt users.

Efficient production in our nation's industrial plants is a prime essential to our winning of the war—and better V-belts than ever before have been urgently needed to keep machines going on the forced-draft, war production schedules that have had to be maintained 24 hours a day!

That is why Gates has been able to embody in the standard Gates Vulco Rope every V-belt improvement which Gates specialized research has developed for use on the Army's motorized equipment—and that is why you are finding that your standard Gates Vulco Ropes are today giving you better service than any V-belts that were built before the war.

All Gates V-Belts are Built with *The Patented* **CONCAVE SIDE—**

Gates THE MARK OF SPECIALIZED RESEARCH

459

THE GATES RUBBER COMPANY

Engineering Offices and Jobber Stocks in All Large Industrial Centers

GATES VULCO ROPE DRIVES

CHICAGO 6, ILL., 549 West Washington DALLAS 2, TEXAS, 1710 N. Market Street ATLANTA 3, GA., 738 C & S National Bank Building
CHARLOTTE 2, N. CAROLINA, 605 West Fifth St. NEW YORK CITY 3, 215-219 Fourth Ave. DENVER 17, COLO., 999 South Broadway
GREENVILLE, S. CAROLINA, 108 W. Washington Street BIRMINGHAM 3, ALA., 801-2 Liberty National Life Bldg.

What Magnesium's lightness means to textile workers...

Machine operators appreciate high speed and continuous operation of their equipment. Mazlo Magnesium's lightweight in textile machinery parts means low inertia—fast stops and starts. It reduces vibration, the major cause for machinery going out of adjustment.

Maintenance engineers will have less fixing and replacing of parts to do. Magnesium has high strength and its lightness means less wear and tear on equipment running at high speeds.

Handling is made easier for everyone in the mill, because magnesium is so light. Bobbins, warp beams, section beams, cloth rolls, jack and edge spools, all must be carried around the mill... no back-breaking job when made of magnesium.

Shippers notice the big difference in weight, too. These are sizable savings on freight when shipping yarn loaded magnesium section beams, to branch plants or outside mills.

Textile Management

The greater use of magnesium can mean added profits. Mazlo engineers will gladly help mill owners or textile machinery manufacturers employ magnesium to best advantage on automatic labor-saving machinery needed to step up the pace of postwar production. Write Aluminum Company of America, Sales Agent for American Magnesium Products, 1705 Gulf Building, Pittsburgh 19, Pennsylvania.

MAGNESIUM MAZLO PRODUCTS

AMERICAN MAGNESIUM CORPORATION

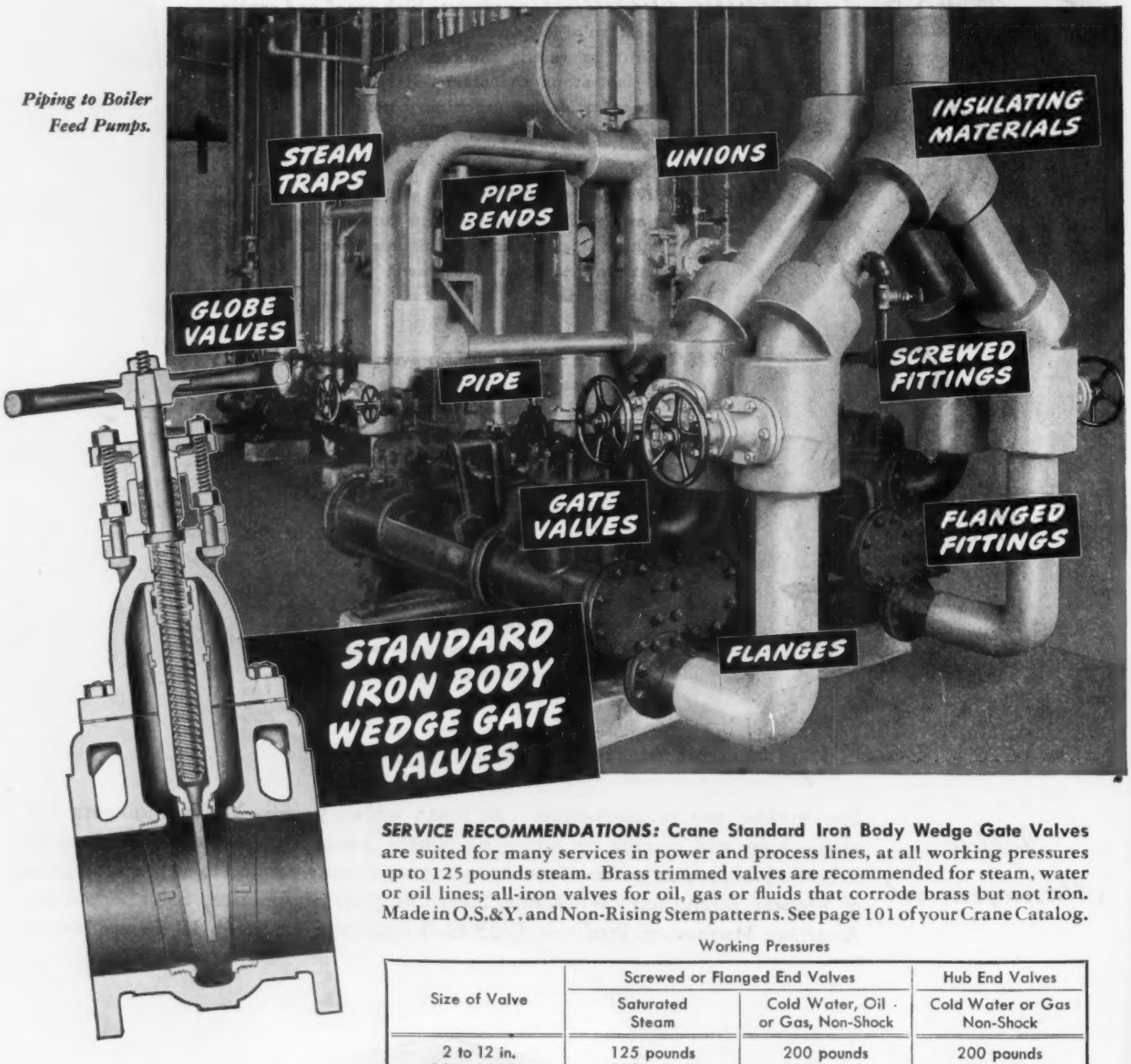
SUBSIDIARY OF ALUMINUM COMPANY OF AMERICA

IT'S CRANE
. . . For ALL Piping Materials

ONE SOURCE OF SUPPLY • ONE RESPONSIBILITY • ONE STANDARD OF QUALITY

By choosing Crane piping materials, you always have the advantage of the world's greatest selection—in brass, iron and steel. One source—your Crane Branch or Wholesaler—takes care of all your requirements. Thus, you are assured of uniform quality in all parts of piping systems—with single responsibility behind them. And because Crane complete piping material service simplifies ordering, it speeds up deferred replacement work . . . helps keep piping at peak efficiency. A typical Crane solution for many of your valve application problems is shown below.

Piping to Boiler Feed Pumps.



SERVICE RECOMMENDATIONS: **Crane Standard Iron Body Wedge Gate Valves** are suited for many services in power and process lines, at all working pressures up to 125 pounds steam. Brass trimmed valves are recommended for steam, water or oil lines; all-iron valves for oil, gas or fluids that corrode brass but not iron. Made in O.S.&Y. and Non-Rising Stem patterns. See page 101 of your Crane Catalog.

Working Pressures

Size of Valve	Screwed or Flanged End Valves		Hub End Valves
	Saturated Steam	Cold Water, Oil or Gas, Non-Shock	Cold Water or Gas Non-Shock
2 to 12 in.	125 pounds	200 pounds	200 pounds
14 and 16 in.	125 pounds	150 pounds	150 pounds
18 to 24 in.	*	150 pounds	150 pounds

*For steam lines larger than 16-in., Crane 150-Pound Cast Steel Gate Valves are recommended. (For sizes under 2-in., use Crane Clamp Gate Valves.)

CRANE CO., General Offices: 836 S. Michigan Ave., Chicago 5, Ill. • *Branches and Wholesalers Serving All Industrial Areas*

CRANE

90 YEARS OF PROGRESS 1855 1945

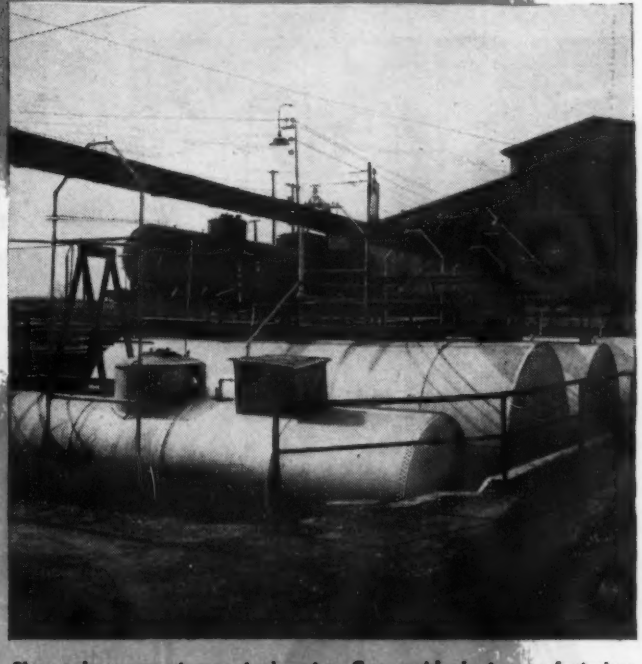
VALVES • FITTINGS • PIPE
PLUMBING • HEATING • PUMPS

OLIVE OIL FROM THE MEDITERRANEAN

"FROM SOURCE THROUGH SULPHONATION—CYANAMID CONTROLS THE QUALITY"

The reliability of a sulphonated oil depends primarily upon two factors. The first is the quality of the oil as it is obtained from its natural source. The second is the efficiency of the processes and the quality control standards by which it is sulphonated. Cyanamid has extensive and long established sources of supply throughout the world for all the various types of oils required for textile processing. For example, shipments of high quality olive oil from the Mediterranean are foreseeable in the not too distant future, after having been virtually cut off during the war. These will, as always, be carefully processed on a large scale with modern equipment in Cyanamid's plants. Whether you use imported or domestic oils, this is your guarantee of consistently high quality and uniformity. Look to Cyanamid for dependable sulphonated oils made from:

Olive Oil	Castor Oil
Tea Seed Oil	Red Oil
Cocoanut Oil	Peanut Oil
Babassu Oil	Corn Oil
Rape Seed Oil	Cottonseed Oil
Sperm Oil	Soya Bean Oil



Shown here are storage tanks at a Cyanamid plant manufacturing textile materials. Large storage facilities for raw materials give stability and uniformity to final product.

AMONG CYANAMID PRODUCTS FOR THE TEXTILE INDUSTRY ARE...

Penetrants • Softeners • Finishes
Sizing Compounds • DECERESOL* OT Wetting Agents
PARAMUL** TT5 Water Repellent, and other specialties
and Heavy Chemicals

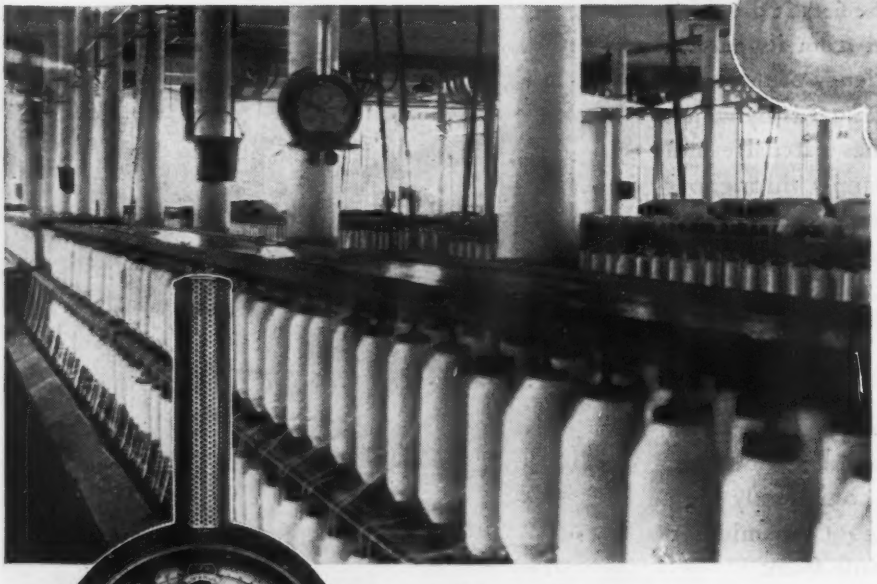
*Reg. U. S. Pat. Off. **Trade-mark

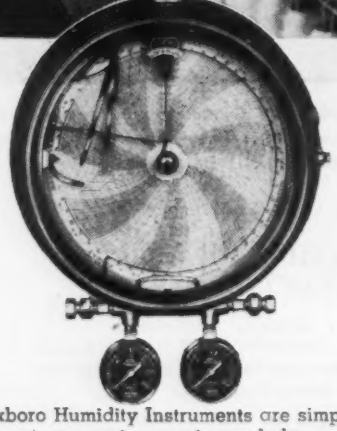
American Cyanamid & Chemical Corporation

(A Unit of American Cyanamid Company)

30 ROCKEFELLER PLAZA • NEW YORK 20, N. Y.

ENGINEERING KNOW-HOW THAT "Puts the Calipers" ON HUMIDITY!





Foxboro Humidity Instruments are simple, rugged, accurate...engineered by men who know the requirements of the textile industry.

Humidity is a tricky factor that can rise or fall without your knowledge. Yet humidity which is out of line can raise havoc with weave-room production and quality. That's why it pays to let Foxboro "put the calipers" on humidity conditions in your mill!

Through more than a quarter century of original research and development in all types of humidity problems, Foxboro engineers have gained the "know how" to help you keep humidity exactly where it belongs – every instant of every day.

Foxboro has perfected the direct-reading hygroscopic type of instrument which is far more sensitive, accurate, and reliable than ordinary regulators.

Why not use this greater "know how" to indicate, record, or control (pneumatically or electrically) the humidity in your mill? Phone our nearby branch for details, or write: **The Foxboro Company, 84 Neponset Avenue, Foxboro, Mass.** Branches in principal cities.

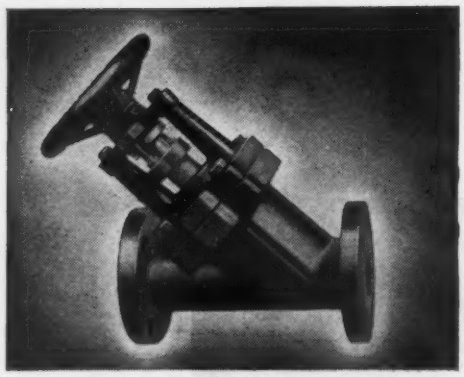
FOXBORO REG. U. S. PAT. OFF. **HUMIDITY** INDICATORS RECORDERS CONTROLLERS

In designing any bearing application you should take advantage of this fact: Bunting Bronze Bearings, today, surpass any Cast Bronze Bearings ever before produced in volume. The Bunting Brass & Bronze Company, Toledo 9, Ohio

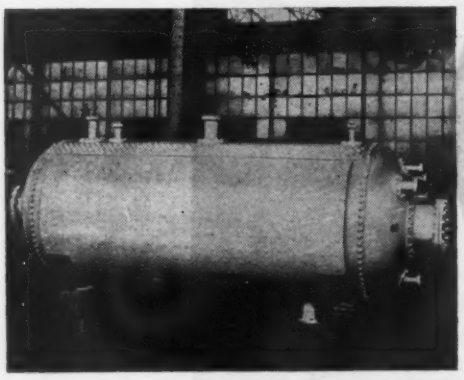
Bunting

BRONZE BEARINGS ☆ BUSHINGS ☆ PRECISION BRONZE BARS

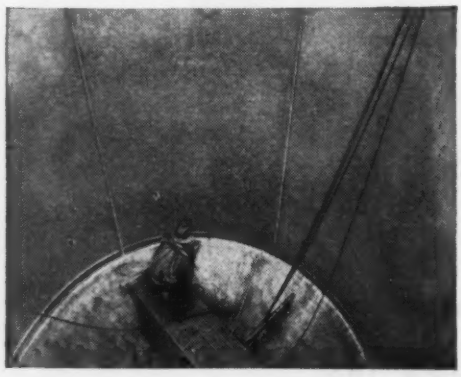
24



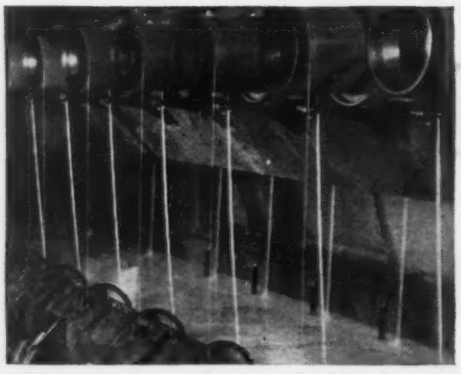
1 For the corrosion resistance of lead under higher pressures...lead-lined and lead-covered iron and steel equipment, including pipe, fittings and flanged acid valves, are available.



2 In equipment such as steam separators, autoclaves, and digesters supplied by us, the lead lining is firmly adherent because of our homogeneous bonding method.



3 Improved corrosion resistance at high temperatures is offered by Tellurium Lead, pioneered by National Lead. Its ability to "work-harden," to strengthen under strain, has won it wide usage for applications subject to undue stress.



4 The corrosion resistance of lead, plus the strength to stand up under vibratory stress, makes Tellurium Lead ideal for covering rayon spinning machines such as this. Installation was by O. G. Kelley & Co., lead burners.

Go "National" for Lead

Everything from Pipe to an Acid Recovery Plant

Whether it's a simple lead pipe, a lead-lined steam separator, or a complete acid recovery plant . . . remember National Lead means *lead*ership in Lead.

Here you can get lead sheet, pipe, coils, valves, flanges, traps, bends, burning bars—to fill every need from the smallest fitting to the largest lead-burning installation. And you get them in the type of lead—chemical, antimonial, tellurium or tellurium-antimonial—which best suits the purpose.

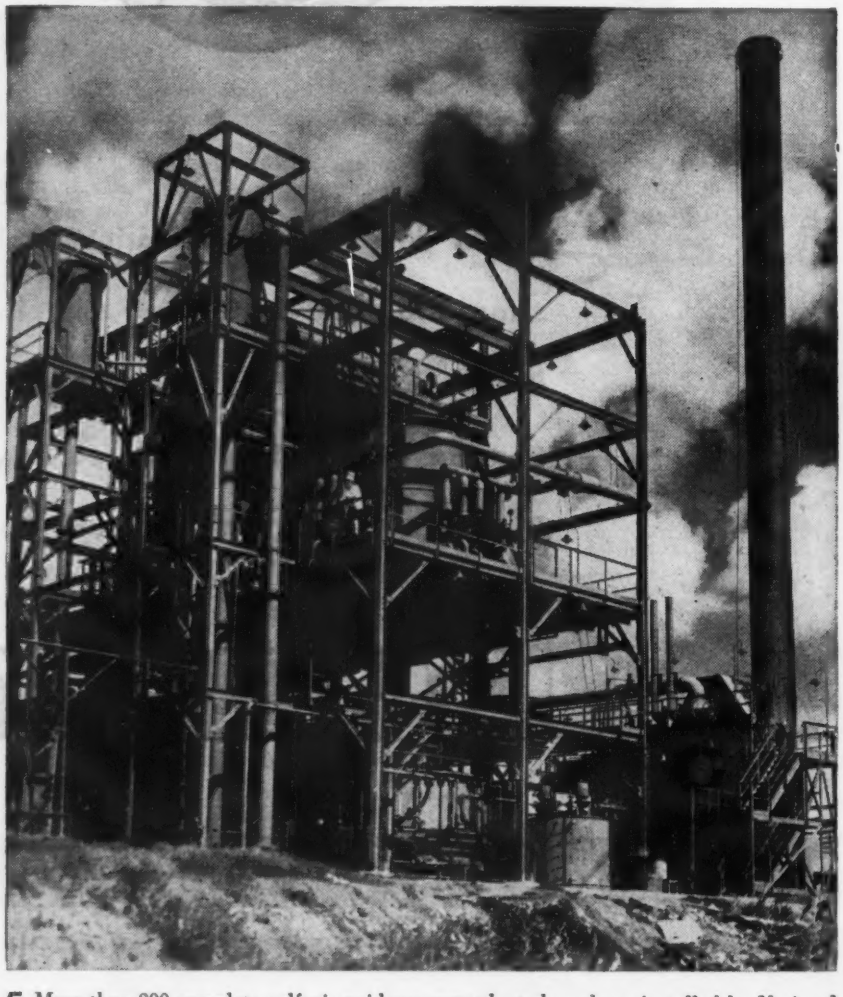
Here, too, you can get lead-lined and lead-covered equipment—acid valves, pipe and fittings, coils and pumps, as well as special lead-lined apparatus fabricated to specification.

Here you can even get a complete sulfuric acid recovery plant—employing the exclusive Simonson-Mantius Process—with everything from the initial plan to the final nut and bolt supplied by National Lead.

And, most important of all, you get the advantage of our years of experience with thousands of lead installations in every field handling corrosive solutions and gases. When you want lead, come to National Lead.

National Lead Company

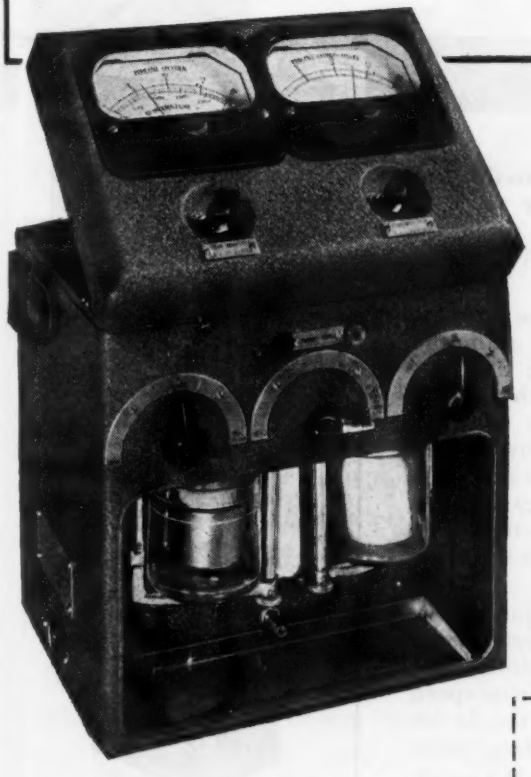
111 Broadway, New York 6, N. Y. *Offices and Plants in Principal Cities and Canada*



5 More than 200 complete sulfuric acid recovery plants have been installed by National Lead. Several of these units have been in continuous operation almost twenty years. So remember, for everything from pipe to an acid recovery plant, *Go "National" for Lead.*

CAN YOU ANSWER THESE 3 QUESTIONS?

1. **How efficiently do your boilers or furnaces burn fuel?**
2. **How accurately can your operators control fuel combustion?**
3. **What have wartime overload conditions done to your fuel consumption?**



If you can't answer these questions, you can find your answers—in just a few minutes—with the Cities Service Industrial Heat Prover.

This unique instrument, exclusive with Cities Service, registers quickly and continuously the per cent of oxygen and combustibles present in the escaping gases or in the furnace atmosphere. Shows you how to burn fuel efficiently and economically.

Invaluable for checking furnace atmospheres in the heat treatment of metals.

This instrument represents just another contribution by Cities Service to wartime conservation of critical material.

Take advantage of the free demonstration offer on your own equipment...at no obligation.*

(Available only in Cities Service Marketing Territories East of the Rockies).

CITIES SERVICE OILS — ONCE-ALWAYS

CITIES SERVICE OIL COMPANY

ARKANSAS FUEL OIL COMPANY

Mail this coupon today for further information

Cities Service Oil Co.
Room 414, 70 Pine Street, New York 5, New York

Gentlemen: Please send me further information on your free demonstration offer of the Cities Service Industrial Heat Prover—at no obligation to me.

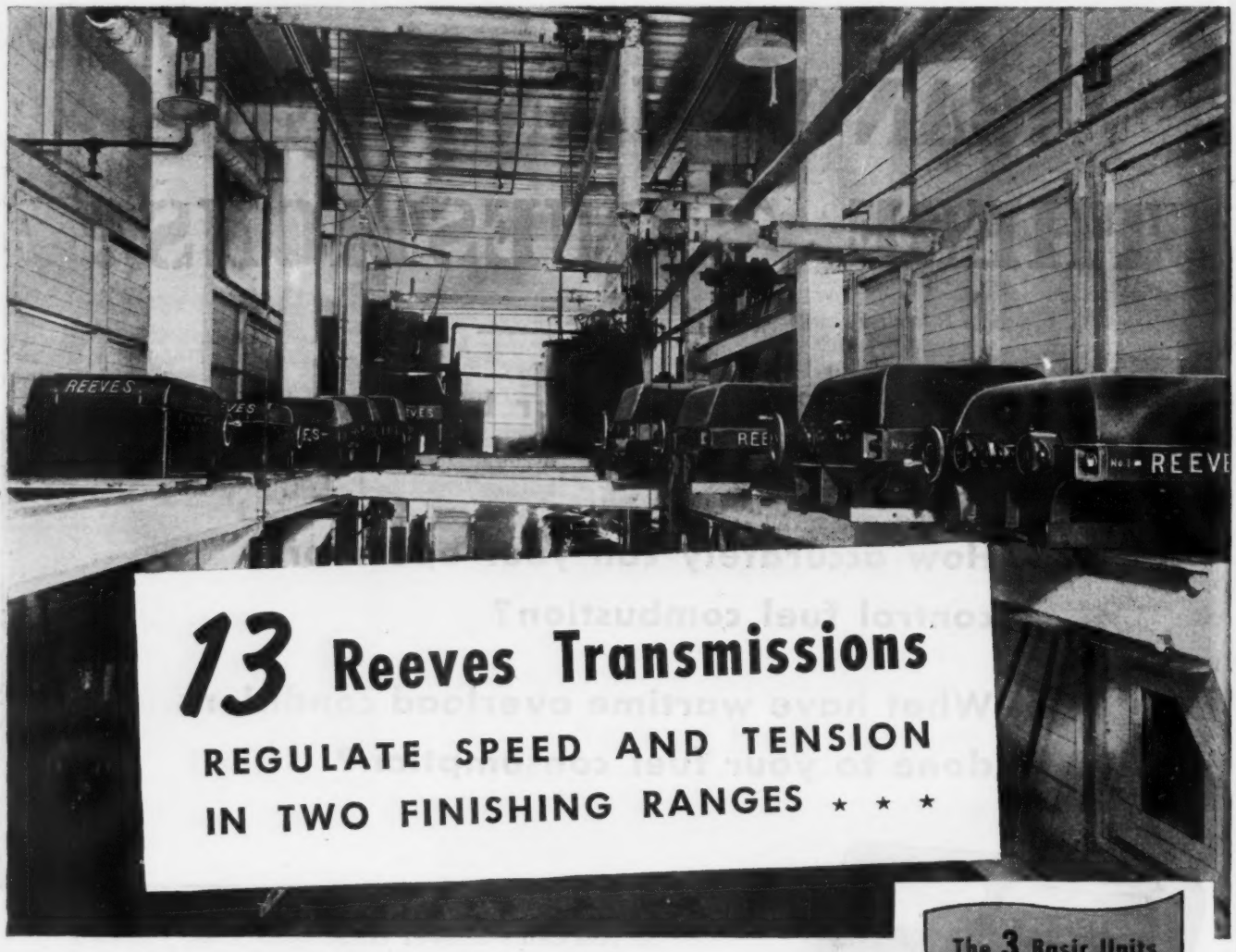
Name.....

Title.....

Company.....

Address.....

City..... State.....



13 Reeves Transmissions

REGULATE SPEED AND TENSION IN TWO FINISHING RANGES ★ ★ ★

● In the operation of a finishing range, two things are exceedingly important: the speed of the cloth through the range; and the tension of the cloth at each stage of the range, to prevent undue stretch or shrinkage.

In the two ranges shown here, one with Mangle and five stacks of cans, and the other with Mangle and six stacks, a No. 5 Class E (4:1 speed ratio) REEVES Variable Speed Transmission is the master control, regulating cloth speed in the range to the right. A No. 6 Class E (4:1 speed ratio) regulates cloth speed in range to the left.

Other sizes of REEVES Transmissions, each different and carefully selected for horse power and speed ratio, drive the mangles, and accurately regulate cloth tension between the stacks of cans.

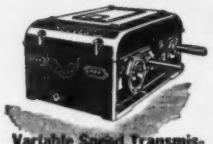
Thus it is not only possible to regulate the speed for various weights of cloth, but also to permit shrinking or stretching of goods to meet exact requirements.

The speed and tension may be changed at any one place along the range, without changing the relationship or tension of cloth between any of the other stacks of cans. When once pre-set for any desired shrinkage or stretch, this setting is maintained *accurately* regardless of speed changes made through the master control for higher or lower cloth speed.

Ease and accuracy of adjustability, and proven dependability for this and many other applications, have made REEVES the predominate speed control method of the textile industry. For additional data, write for 96-page Catalog WG-450.

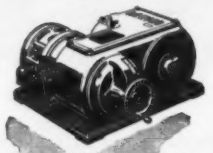
REEVES PULLEY COMPANY • COLUMBUS, INDIANA

The 3 Basic Units in the REEVES LINE



Variable Speed Transmission for infinite speed adjustability over wide range.

Vari-Speed Motor Pulley converts any standard constant speed motor to a variable speed drive.



Motodrive combines motor, speed varying mechanism, reduction gears.

REEVES *Accurate Variable* Speed Control

This is GEON 101, a very fine powderlike material. To insure uniform particle size, all must pass through 42 mesh screen.

An important advantage offered by GEON *polyvinyl resins*

NEW users of GEON polyvinyl materials are invariably delighted to discover that these resins provide definite processing advantages resulting directly from the *uniformity* of the raw material.

For example, with GEON resins it isn't necessary to mix several batches together in an effort to get uniformity in the base material. Nor is there any need to adjust processing machinery frequently to compensate for batch-to-batch variations of the plasticized product. The formula used yesterday with one batch of GEON can be used today and tomorrow with new batches. And the finished product will be uniform — and that means satisfied customers, fewer rejects, better profit.

All this is true because manufacturing methods for GEON result in a material that is *uniform* — batch after batch after batch are all alike within close tolerances controlled by rigid specifications. For example, specific viscosity limits for GEON 101 are .52—.57. To control particle size, 100% must pass through 42 mesh screen.

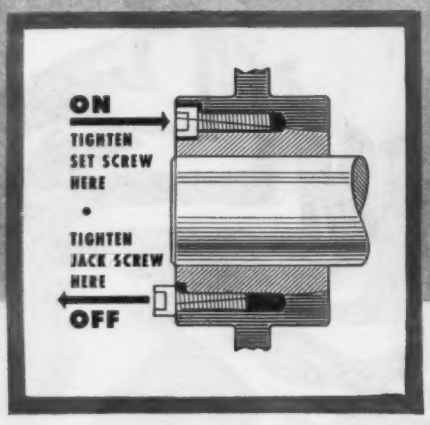
Another important advantage of GEON is that the right *combination* of properties for your product can be selected to meet the specific conditions of end use. These properties include resistance to water, heat, cold, aging, wear, abrasion, sunlight, chemicals, and many other normally destructive factors. For more information write Department HH-5, B. F. Goodrich Chemical Company, Rose Building, Cleveland 15, Ohio.

Geon
Polyvinyl Materials

B. F. Goodrich Chemical Company

A DIVISION OF THE B. F. GOODRICH COMPANY

Simple, ISN'T IT?



- The simplest, surest mechanism ever devised for holding wheels to shafts! No flange. No collar. No protruding parts.
- The Taperlock Sheave mounts as a complete unit. Slip it on, line it up and tighten *while sighting*. It's in place on the first try!
- The bushing is wedged into the sheave by means of set screws—with a firmness equivalent to a shrunk-on fit—whether the shaft is standard or normally undersize.
- The Taperlock runs *true*. The bushing extends the entire length of the hub; it provides a *full* bearing surface.
- Close mountings are made possible. No flange nor collar nor other device is required at either end of the sheave hub.
- The Taperlock "unlocks" with less effort than any other sheave—due to its special taper.
- Taperlock Sheaves will be stocked by Dodge Transmissioneers in principal cities—and will be available in ALL stock sizes.

New TAPER-LOCK *Sheave*

PATENT APPLIED FOR

Easy on—easy off—locks fast to the shaft! ALL the advantages you've ever dreamed about in a sheave are *here*—in the simplest, quickest acting mechanism ever developed for the purpose!

For full details call your local Dodge Transmissioneer. You'll find his name listed under "Power Transmission Equipment" in your classified telephone directory. Or write

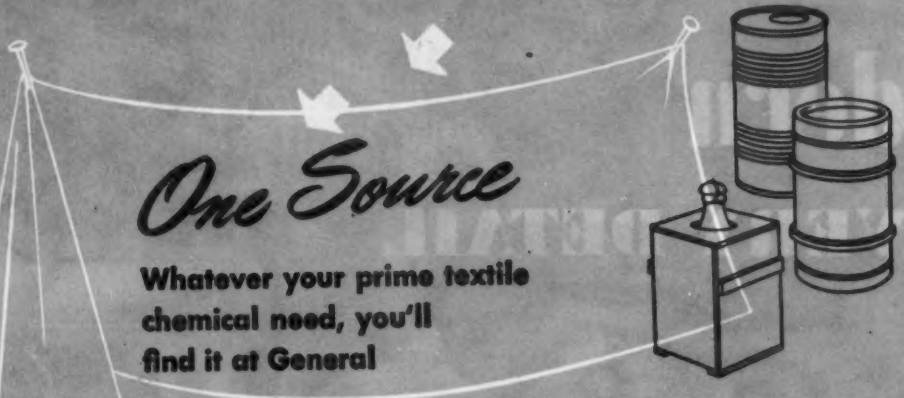
DODGE MANUFACTURING CORPORATION, MISHAWAKA, INDIANA

DODGE
MISHAWAKA

SIGN OF THE DODGE TRANSMISSIONEER
There are 257 Dodge factory graduate Transmissioneers, located in principal cities, to show you NEW and BETTER ways of transmitting power. See your local classified telephone directory.

SPECIFY "GENERAL CHEMICAL"

for outstanding detergents, antichlors, mordants



One Source

Whatever your prime textile chemical need, you'll find it at General

Whether you work with *natural* or *man-made* fibers, the textile chemicals you use can greatly affect the color and finish of your products, as well as facilitate greater production efficiency.

For almost half a century General Chemical Company has produced a broad range of chemicals for the textile industry, combining long experience in the field with closely controlled manufacturing standards. Its valuable "know how" assures acids, detergents, antichlors, peroxide stabilizing agents or mordants of high quality, purity and uniformity. That's why you should "Specify General" for your chemical requirements.

BASIC CHEMICALS

GENERAL CHEMICAL COMPANY

REG. U.S. PAT. OFF.

FOR AMERICAN INDUSTRY

Select Your Textile Chemicals From These General Chemical Products

Aqua Ammonia • Acetic Acid • Hydrofluoric Acid Muriatic Acid • Sulfuric Acid • Epsom Salt • Glauber's Salt • Sodium Bifluoride • Sodium Bisulfite, Anhydrous Sodium Hyposulfite • Sodium Metasilicate • Sodium Silicate • Disodium Phosphate • Tetrasodium Pyrophosphate • Trisodium Phosphate • Sodium Sulfide • Oxalic Acid • Chrome Alum

GENERAL CHEMICAL COMPANY

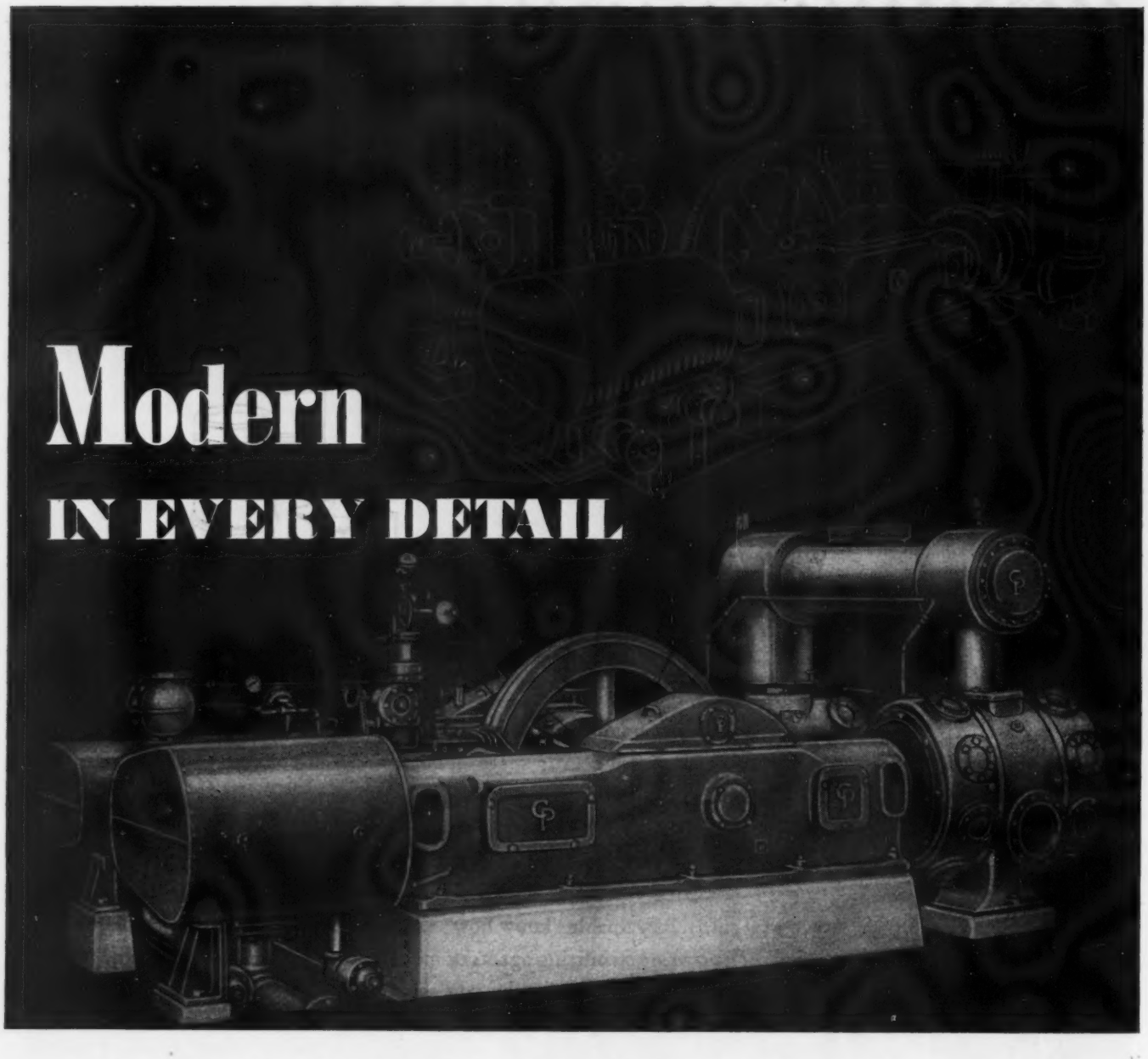
40 Rector Street · New York 6, N. Y.

Sales and Technical Service Offices: Atlanta • Baltimore • Boston Bridgeport (Conn.) • Buffalo • Charlotte (N. C.) • Chicago Cleveland • Denver • Detroit • Houston • Kansas City • Los Angeles • Minneapolis • New York • Philadelphia • Pittsburgh Providence (R. I.) • San Francisco • Seattle • St. Louis • Utica (N. Y.) Wenatchee • Yakima (Wash.)

In Wisconsin: General Chemical Wisconsin Corp., Milwaukee, Wis.

In Canada: The Nichols Chemical Company, Limited Montreal • Toronto • Vancouver

Modern
IN EVERY DETAIL



CLASS H STEAM DRIVEN COMPRESSOR

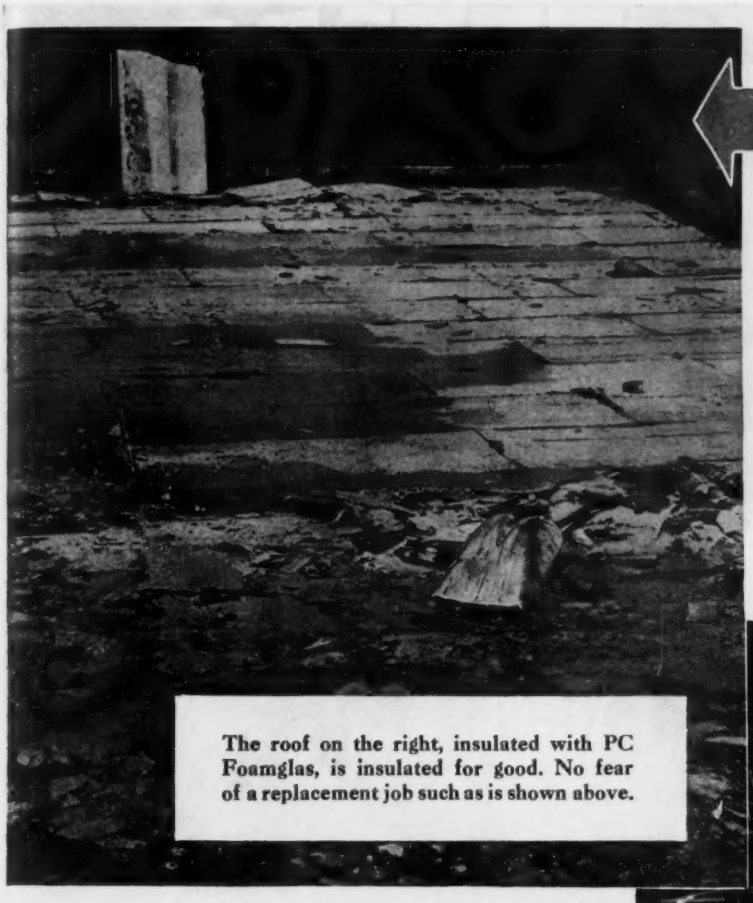
FORTY years of experience went into the building of CP Class H — latest model of CP Steam Driven compressors.

A thoroughly modern steam end, proportioned to the purchaser's steam conditions, combined with full force-feed lubrication of the running gear and a highly efficient air end with its Simplate Valves, all contribute to the high overall economy of these CP machines. The double crosshead-tie rod construction provides direct, straight-line transmission of power from steam end to air end. Capacities range from 400 to 6600 c.f.m., 100 to 125 pounds air pressure. Other sizes in single and multi-stage design for lower and higher pressures. Write for literature.

★★★★★★★★★
PNEUMATIC TOOLS
ELECTRIC TOOLS
(Hicycle...Universal)
ROCK DRILLS

CHICAGO PNEUMATIC
TOOL CP COMPANY
General Offices: 8 East 44th Street, New York 17, N. Y.

★★★★★★★★★
AIR COMPRESSORS
VACUUM PUMPS
DIESEL ENGINES
AVIATION ACCESSORIES



The roof on the right, insulated with PC Foamglas, is insulated for good. No fear of a replacement job such as is shown above.

This won't happen here

YOU DON'T have to figure on repairs and replacement when you insulate your roof with PC Foamglas. For this strong, rigid material resists attack by elements that cause other materials to lose insulating efficiency. Made of millions of air-filled glass cells, PC Foamglas helps to maintain temperature and humidity levels, to prevent condensation, permanently.

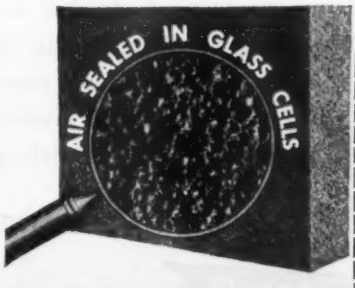
When you need roof insulation, you need a material that is moistureproof, fireproof, vaporproof, verminproof and impervious to most acids. It is conveniently packaged, easily handled, quickly installed.

Only with PC Foamglas do you get all these advantages. Even a break in the roofing felt that exposes the material to rain or melting snow will not cause PC Foamglas to rot, check, warp, swell or shrink. In addition it forms such a firm, even base for roofing felt that such breaks rarely if ever occur.

FIRST COST IS LAST COST

When you are figuring on insulation for roofs, floors, walls, tanks or plant equipment, learn why the most efficient, the most economical material is PC Foamglas. Check your choice of the illustrated booklets on PC Foamglas Insulation on the convenient coupon and mail it today to Pittsburgh Corning Corporation, 632 Duquesne Way, Pittsburgh 22, Pa.

· Also makers of PC Glass Blocks ·



PC FOAMGLAS *Waterproof Fireproof* **INSULATION**

T. M. REG. U. S. PAT. OFF.

Pittsburgh Corning Corporation
Room 675, 632 Duquesne Way
Pittsburgh 22, Pa.

Dear Sirs:

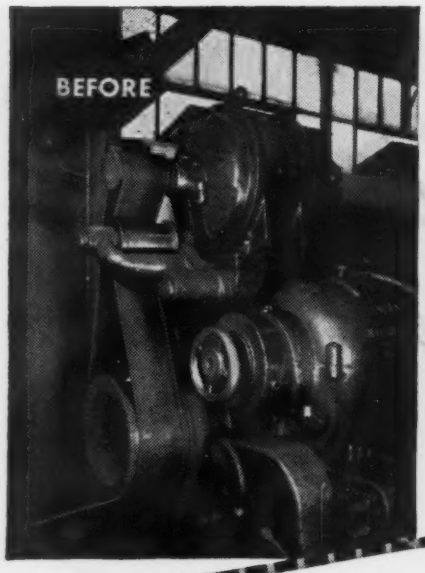
Please send along my *free* copies of the booklets I have checked. It is understood that I incur no obligation.

Roofs_____ Walls_____ Floors_____

*Name*_____

*Address*_____

*City*_____ *State*_____



Production goes up when VEELOS goes on at INLAND STEEL

Belt Slippage Ended . . . Lathe Takes Cut Almost Twice As Deep

The "Before and After" Story of a Belt Drive. The photograph at the left shows a flat belt drive on a Libby Turret Lathe at the Inland Stee. Company; the photograph at the right shows turret lathe after replacement of flat belt with Veelos. Idler has been eliminated . . . belt slippage has been ended . . . and the lathe now takes a cut almost twice as deep as before.

Link Construction Ups Production

WHEREVER Inland Steel Company has installed Veelos, machine production has increased.

Veelos—the adjustable V-belt—has demonstrated its unquestionable value to Inland department heads. For example, consider the drives shown in the "before and after" photographs of the Libby Turret Lathe. The former flat belt drive constantly slipped. Veelos ended this slippage completely. In fact, *these Veelos drives have not even been readjusted since their installation in May, 1944.* Yet these drives operate 24 hours a day, 6 days a week. All need for the idler shown with the flat belt drive has been eliminated. And, equipped with Veelos, this turret lathe takes a cut almost twice as deep as it was able to take when equipped with flat belt.

In the Textile Industry, too, Veelos Helps Increase Production

Write today for your free Veelos manual as your first step toward using Veelos. A single drive will convince you of the advantages of Veelos . . . just as Inland has been convinced.

VEELOS
THE LINK
V-BELT
Adjustable to any Length
Adaptable to any Drive

MANHEIM MANUFACTURING & BELTING COMPANY
MANHEIM, PA.

Work of Art . . . The smooth finish of clear, even-textured fabric in stockings is a work of art. Every full-fashioned stocking manufacturer knows that successful sales depend on flawless production. Keep your Knitting Machines young and effective with TMW Needles. *. . . And remember: Regular Reneedling Pays! Let us put your needle bars in shape for faster, more accurate, more profitable knitting.*

TEXTILE MACHINE WORKS • READING, PA.

THE WAR DECORATIONS OF
TEXTILE MACHINE WORKS
Bur. of Ord. Flag and Navy "E"
July 25, 1941
One Star All-Navy "E" Burgee
January 25, 1942
Two Star Army-Navy "E"
July 25, 1942
Three Star Army-Navy "E"
January 25, 1943
Four Star Army-Navy "E"
January 11, 1944
Five Star Army-Navy "E"
July 9, 1945

"Everything comes to those who wait."

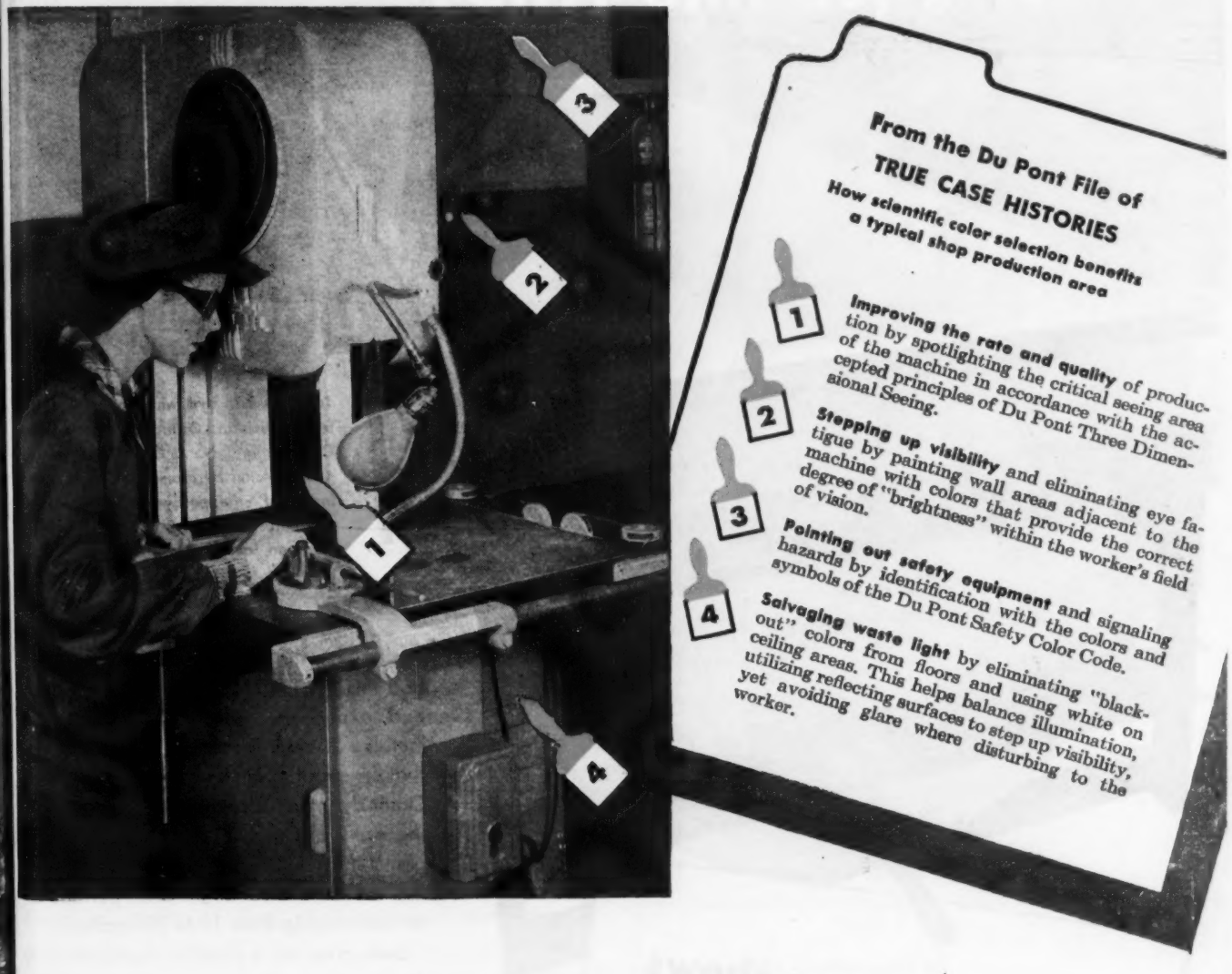
RABELAIS

When material and manpower are again available we will begin production on the new high-precision READING Machines, designed to develop a new-high standard of quality and quantity production in the knitting of Full-Fashioned Stockings . . . Until such time as we can deliver these new machines to you, we will do our utmost to help you keep your present equipment at highest efficiency.

TEXTILE MACHINE WORKS • READING, PA.

Boost production, improve employee efficiency with

DU PONT Color Conditioning


From the Du Pont File of
TRUE CASE HISTORIES
How scientific color selection benefits a typical shop production area
1
Improving the rate and quality of production by spotlighting the critical seeing area of the machine in accordance with the accepted principles of Du Pont Three Dimensional Seeing.
2
Stepping up visibility and eliminating eye fatigue by painting wall areas adjacent to the machine with colors that provide the correct degree of "brightness" within the worker's field of vision.
3
Pointing out safety equipment and signaling hazards by identification with the colors and symbols of the Du Pont Safety Color Code.
4
Salvaging waste light by eliminating "blackout" colors from floors and using white on ceiling areas. This helps balance illumination, utilizing reflecting surfaces to step up visibility, yet avoiding glare where disturbing to the worker.

The scientific use of paint to increase production and improve employee morale

HERE IS A TESTED, scientific color program for your entire plant. Results already obtained from all types of industries prove conclusively that Color Conditioning plays an important part in increasing operating efficiency by providing better seeing conditions.

Du Pont Color Conditioning for industry is practical, functional. It is not "interior decoration." It produces results by increasing employee efficiency. It reduces eye strain and fatigue. It salvages waste light. It helps eliminate personal injuries, fosters better employee-management relations.

Plan today for a safer, more efficient, more productive plant through Color Conditioning. Increased production of Du Pont Color Conditioning Paints will enable you to put this proved program to work in the very near future.

Call in a Du Pont Paint Engineer or write to: E. I. du Pont de Nemours & Co. (Inc.), Finishes Division, Wilmington 98, Del.

DU PONT
REG. U. S. PAT. OFF.
COLOR CONDITIONING
PAINTS
BETTER THINGS FOR BETTER LIVING
... THROUGH CHEMISTRY

What Metal would YOU select for a job like *THIS*?

16 ft. by 8 ft. dye tank made by Metalsmiths Division, Orange Roller Bearing Co., Orange, N. J. Constructed of 16 gauge Monel by atomic hydrogen welding, and equipped with Monel perforated false bottom, 2 in. Monel heating coil, and special 8 in. drain.

• • •

Long experience shows which metal stands up best against corrosives in carpet yarn dyeing

The plant superintendent who had this 16 ft. carpet yarn dye tank built had experience with various dyehouse metals . . . experience that convinced him that the metal to use on this job was Monel. Other dyehouse superintendents have had the same experience. Right in their own plants they see Monel equipment which is still in excellent condition after periods of service ranging from 10 to 20 years.

Such a record is proof to dyehouse men that Monel stands up against corrosion by a wide range of dyehouse chemicals. Especially outstanding is the resistance of this high-nickel alloy to corrosion by *salt*.

Check up on *your* equipment. Note the age and condition of tanks, tank linings, rolls and other items of Monel. Then, when the question of new equipment comes up, consider the possibilities of getting the same long, satisfactory performance with Monel.

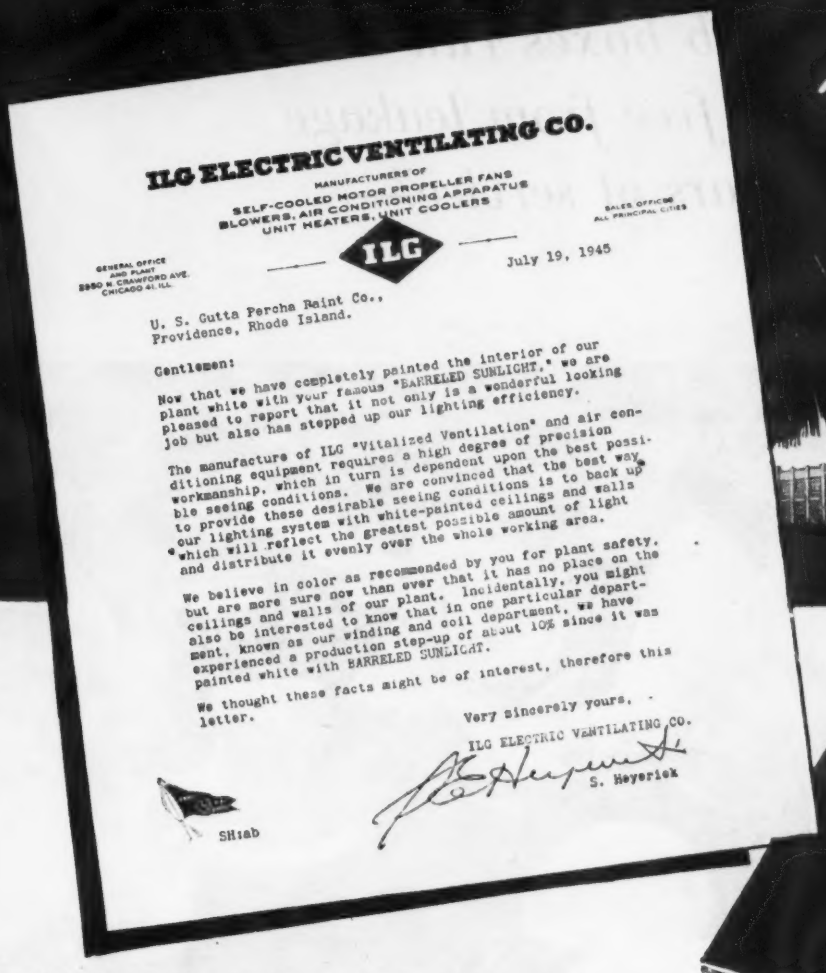
Write for full information on Monel. Ask for the current issue of "Textile Process Topics." Address:

THE INTERNATIONAL NICKEL COMPANY, INC.

67 Wall Street New York 5, N. Y.

Monel

"Adequate Light WHITE Ceilings and Walls Good Seeing" says ILG



ILG ELECTRIC VENTILATING CO.

MANUFACTURERS OF
SELF-COOLED MOTOR PROPELLER FANS
BLOWERS, AIR CONDITIONING APPARATUS
UNIT HEATERS, UNIT COOLERS

GENERAL OFFICE AND PLANT 2850 N. CRAWFORD AVE. CHICAGO 41, ILL.

SALES OFFICES ALL PRINCIPAL CITIES

ILG

July 19, 1945

U. S. Gutta Percha Paint Co.,
Providence, Rhode Island.

Gentlemen:

Now that we have completely painted the interior of our plant white with your famous "BARRELED SUNLIGHT," we are pleased to report that it not only is a wonderful looking job but also has stepped up our lighting efficiency.

The manufacture of ILG "Vitalized Ventilation" and air conditioning equipment requires a high degree of precision workmanship, which in turn is dependent upon the best possible seeing conditions. We are convinced that the best way to provide these desirable seeing conditions is to back up our lighting system with white-painted ceilings and walls which will reflect the greatest possible amount of light and distribute it evenly over the whole working area.

We believe in color as recommended by you for plant safety, but are more sure now than ever that it has no place on the ceilings and walls of our plant. Incidentally, you might also be interested to know that in one particular department, known as our winding and coil department, we have experienced a production step-up of about 10% since it was painted white with BARRELED SUNLIGHT.

We thought these facts might be of interest, therefore this letter.

Very sincerely yours,
ILG ELECTRIC VENTILATING CO.
S. Heyerick

SH:ab

THE BASIC REASON for painting any industrial interior, as this typical letter from ILG Electric Ventilating Company attests, is to *get the most out of both natural and artificial light.* White paint on plant ceilings and walls provides an "indoor sky" — conserving and diffusing light to reduce glare, make seeing easier and enhance worker safety, comfort and efficiency.

A recent lighting survey showed only about one plant in a hundred to be adequately illuminated for easy, comfortable seeing. Unless your plant is among that fortunate minority, the use of color on important light-reflecting surfaces may prove a costly and disappointing investment. For full facts on the relationship of light and paint to good seeing and plant efficiency, send for a free copy of "Color for Industry" today.

DATE .....

U. S. GUTTA PERCHA PAINT CO.
20-I Dudley St., Providence, R. I.

Please send us, without charge or obligation, a copy of your 16 page illustrated booklet entitled "Color for Industry."

COMPANY .....

STREET AND NUMBER .....

CITY ..... STATE .....

ATTENTION .....

TITLE .....

BARRELED SUNLIGHT

SPECIALISTS FOR NEARLY FIFTY YEARS

IN MAINTENANCE PAINTS FOR INDUSTRY

"With GULF QUALITY LUBRICANTS
our comb boxes run cool
and are free from leakage
after years of service"—

says this Overseer

"WE HAVE TANGIBLE EVIDENCE of better lubrication with Gulf quality lubricants," says this Overseer of spinning and carding. "Our comb boxes run cool, and are free from leakage after years of service."

Textile mill men from Maine to New Mexico report important benefits with Gulf oils and greases in service. These quality lubricants are scientifically manufactured to rigid specifications for stability and endurance. They provide the best in lubrication and safeguard your equipment against excessive wear and resulting mechanical troubles.

The helpful counsel of Gulf Service Engineers, specialists in scientific textile mill lubrication, will help you to get the kind of lubrication that insures uninterrupted production and low maintenance costs. Write, wire, or phone your nearest Gulf office today and ask a Gulf Service Engineer to call.

Gulf Oil Corporation · Gulf Refining Company

Division Sales Offices:

Boston · New York · Philadelphia · Pittsburgh · Atlanta
New Orleans · Houston · Louisville · Toledo

GULF INDUSTRIAL LUBRICATION

SEALEDPOWER Motor driving a dye-tub, flow mixer in a worsted plant.

Even a steam bath won't faze a SEALEDPOWER

The **SEALEDPOWER** Motor, an exclusive Crocker-Wheeler design, was developed for just such difficult applications as this . . . applications where excessive moisture and corrosive fumes make short work of less well protected motors.

Neither steam nor fumes can penetrate to the tightly sealed interior of a **SEALEDPOWER** —to the rotor and stator windings where damage could be caused. The exterior surfaces, which are in constant contact with the moisture and fume laden atmosphere of the room, are highly resistant to corrosion.

The **SEALEDPOWER** is also ideal for dusty locations. Unlike ordinary fan-cooled motors, the cooling air is blown over the frame, not through easily-clogged, hard-to-clean passages.

Why not try one of these motors—in a particularly difficult location? If you would like more details, write on your company letterhead for descriptive bulletins. No obligation.

CW-8

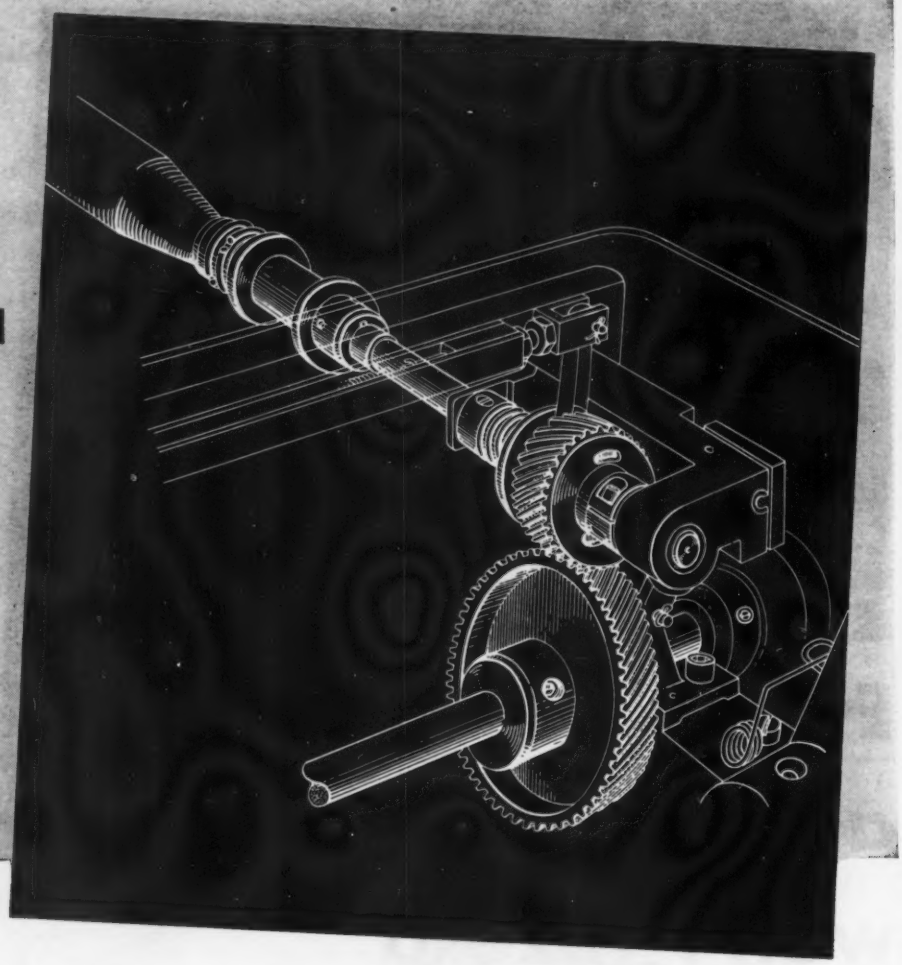
CROCKER-WHEELER

A DIVISION OF JOSHUA HENDY IRON WORKS, AMPERE 35, NEW JERSEY

Branch Offices: BOSTON • BUFFALO • CHICAGO • CINCINNATI • CLEVELAND • DETROIT • LOS ANGELES • NEW YORK • PHILADELPHIA • PITTSBURGH • SAN FRANCISCO • WASHINGTON

SQUIRREL CAGE MOTORS WOUND ROTOR MOTORS DIRECT CURRENT MOTORS GENERATORS FLEXIBLE COUPLINGS

ALL THE PRODUCTION YOU EXPECT



because the drive is positive, through gears

In making plans for an after-the-war changeover to automatic bobbin winding, it is important to realize that the potential of increased production inherent in the automatic winding machine can only be reached if the winding spindle is up to speed at all times. For this reason the method of furnishing power to the winding spindle is an important factor in the selection of an automatic machine.

On the Universal Automatic (No. 99), each spindle is gear-driven from a rotating shaft, so there is no slip... no loss in speed between shaft and spindle.

Thus, the actual winding speed and spindle production are maximum at all times.

LOOK FOR ALL 3 IN CONSIDERING AN AUTOMATIC MACHINE

In addition to positive drive, there are two other important factors to look for in an automatic bobbin winding machine. These are:

Electrical Controls. On the Universal Automatic, the use of electrial as well as mechanical controls simplifies design, eliminates fast-wearing mechanical parts, and reduces the chance of breakdown.

A Proven Bobbin Building Method. On the Universal Automatic, the same method that proved successful on the No. 90 is used. The Universal Traverse Wheel produces bobbins that are round, parallel-sided, and free from ridges that cause plucks.

These three important features are responsible for the three advantages which present users find in the Universal Automatic — maximum production, lowest maintenance, quality winding.

Other Important Universal Features. "Layer-lock" wind, reducing tendency to "shell off" in the shuttle. Centralizing bobbin driver. Automatic release of tension at start of winding. Magazine creeling. 9½" maximum traverse, 1½" maximum diameter.

The UNIVERSAL AUTOMATIC has proved successful over a period of years winding rayon yarns for the loom. Orders are now being accepted for winding all fibres. Universal Winding Company, Providence, Boston, Philadelphia, Utica, Charlotte, Atlanta.

UNIVERSAL AUTOMATIC

High Speed Bobbin Winding Machine

LEESONA REG. U.S. PAT. OFF. 23-5-7

... Putting Electricity to Work to Improve Your Bobbin Winding

September, 1945 **TEXTILE WORLD** Vol. 95, No. 9

RECONVERSION,

Thrust on Industry Suddenly, Lights Road to FREE ECONOMY

HIGHLIGHTS: *Of some 400 textile controls, only 30 to 40 remain—Washington faces problems with surprisingly scant data on which to act—Military textiles cut 65 to 96%, and many items wholly dropped—Army surpluses present no current problem—UNRRA gets along without new orders—Some tax relief in 1946 foreseen—Textile machinery controls are eased*

By GLADYS MONTGOMERY
Washington Editor, TEXTILE WORLD

THE SUDDEN ENDING of the war against Japan brought government and industry up full-tilt against the gigantic problem of all-out reconversion with all possible speed, as compared with the anticipated pattern of a stage-by-stage change-over from war to peace production.

Instead of a series of minor shocks easily absorbed over comparatively short periods in different areas of the national economy, reconversion is now geared to one major shock which may continue well into the summer of 1946.

Under a full head of steam, the Administration is striving toward a free economy at the earliest possible moment. The assumption underlying the drive is that this is the surest way of reaching its dual goal of providing jobs for the 8,000,000 people who are expected to be unemployed by next spring and of producing civilian goods in sufficient quantities to meet all normal needs and thus build a bulwark against inflation.

With manpower controls now eliminated—except as to wages—the Washington view is that the textile industry will gradually be able to get the additional employees necessary to reach and maintain the extraordinarily high level of production that the industry must have in order to take up the backlog of civilian requirements at home and the demands from abroad.

Out of some 400 controls which were in effect before the end of the war, all but 30 or 40 have gone by the board. Those retained have the following broad objectives: to prevent wage increases that would increase the cost of living; to maintain the general level of prices in the interest of economic stabilization; to increase the volume of scarce materials and to channel their use during the scarcity period; to control inventories in order to

Britain Tells Its Textile Industry to Thrive, or Else ——!

The British government's plans for the cotton trade were outlined by Sir Stafford Cripps, president of Britain's Board of Trade, at Manchester on Aug. 11. The important points, as published by "Manchester Guardian" follow:

1. The Government is determined that the cotton industry shall once more become a flourishing industry, providing goods for home consumption and export and good wages and conditions for operatives.

2. To this end, the Government is prepared to assist the industry to the best of its ability, provided that production of as great a volume of goods as possible at a reasonable price and with good working conditions for operatives takes precedence over all other considerations.

3. It is not part of the present Labor government's program to nationalize the cotton industry, provided that the industry upon which more than 2,000,000 of the British people depend directly or indirectly, carries through with expedition measures necessary for its reorganization.

4. The industry must take immediate steps to improve conditions of working and of organization.

5. The government appreciates that if the cotton industry is to continue in the hands of private enterprise, it must yield a reasonable return on capital actually employed.

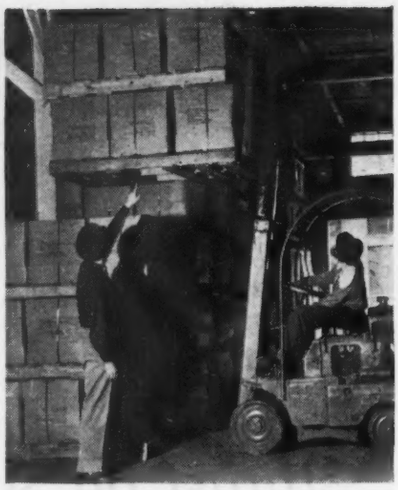
6. Additional points must be accepted by the industry as a whole as a condition of the support promised by the government. These follow:

(a) Extension of joint consultation, particularly cooperation within the mill, and of personnel management.
(b) Reform of distribution arrangements to secure long runs of production.
(c) Extension of double-shift working where modern machinery demands.
(d) Re-equipment with modern machinery; mergers in spinning section.

prevent hoarding; to provide assistance to break bottlenecks; and to allocate materials for low-price items of essential consumer goods.

The tug-of-war between WPB and OPA as to the extent of the controls to which the commodities, particularly in the critical shortage areas such as textiles, shall be subjected during reconversion may have to be solved by the policy makers at the top—the Office of War Mobilization & Reconversion and the Office of Economic Stabilization.

Because of the dimensions of the change, there is an enormous amount of confusion in Washington at this time, not only in policy direction in specific areas, but also in the lack of certainty as to the actual facts. There are many, many unknown factors. How much will the military requirements for textiles be? No one will venture an authoritative answer to that question until the strength of the various arms of the service is fixed, and Congress may have something to say about that. How much will the military let loose from their inventories scattered all the way from Iceland to Guadalcanal? No one knows, because an inventory has not been taken and the size of the military establishment itself has not been determined. Hence, reliable data can be regarded as a critical shortage in these early days of reconversion.



Stocks of herringbone twill shown are in warehouse of Philadelphia QM Depot. These and many more like them will be stored for future use or declared surplus as the best judgment of the Army authorities dictates.

The following material compiled by TEXTILE WORLD is based on scores of interviews with government officials who have dealt with the textile program during the war and who are still at their "battle stations" at the request of President Truman.

Fourth-Quarter Military Needs

Present indications are that military cotton-goods requirements will be not more than 75 million yards for the fourth quarter, with the probability that further screening will reduce it. Original fourth-quarter commitments of the Army and estimated fourth-quarter requirements, taking into consideration recent cutbacks, are shown below:

Estimated Army Cutbacks on Cotton Goods for Fourth Quarter of 1945
(in millions of yards)

Type	Stated 4th Quarter	Cut	Indicated New Requirements
Combed Goods	105	65%	36.0
Carded Goods	196	85%	29.
Duck	112	93%	7.5
	413		72.5*

For the period from August to December, 1945, Army QM has already canceled 80 million yards of duck and duck substitutes and 165 million yards of other cotton broad woven goods.

The only combed fabrics that seem to remain in the picture to a small extent are uniform twills and wind-resistant sateen. Among the combed-goods items which are eliminated are wind-resistant poplins, oxfords, and marquisettes.

At this writing, Army is planning to discontinue all duck purchases after Oct. 1. The estimate immediately after V-J Day was for 7½ million yards per quarter in No. 4 and No. 6 ducks. There is a possibility of some small procurement for War Shipping Administration.

Among other carded fabrics which QMC expects to be canceled completely are herringbone twill, unbleached drill, all print cloth including 80-squares, and sheeting for rain wear. Medical Corps requirements for surgical equipment are being cut about 90%.

WOOL AND OTHER TEXTILES. Compared to a previously scheduled fourth-quarter allocation of 25,000,000 yd. of wool goods for the military agencies, the revised procurement will be negligible, with an indicated maximum of one million yards. The cutbacks affect serges, flannels, and blankets. Completely terminated were contracts covering the following types of cloth: wool Barathea, 14 oz., OD; wool cloth, 14 oz., drab; wool flannel, 10.5 oz. OD; wool flannel, 10.5 oz., all piece dyes; wool serge, 22 oz., OD No. 33; cotton warp, mohair filled 6 oz. khaki; wool cloth, knitted, 20 oz., OD; wool cloth, knitted, 26 oz., OD.; wool cloth with double-face pile; worsted tropical, 10.5 oz., OD; and wool blankets, OD.

The Army is canceling all of its heavy-weight merino underwear procurements for the fourth quarter. This is true of practically all other knit goods items with the exception of cushion-sole socks. There may be a procurement of about 10 million pairs of those socks compared with a previous requirement of over 23 million pairs. Navy knit-goods probably will be cut almost completely.

The Army Service Forces has canceled 9.9 million yards of nylon twill which it was procuring for ponchos. Army Air Corps cutback figures in nylon will not be available until check is completed on inventories and peacetime requirements are estimated. Parachute requirements have been cut to approximately one month's inventory, and parachute cordage to one-half a month.

* *Last minute indications point to a lower figure. Some authorities estimate as low as 50 million yards for new requirements.*

WPB Controls Fade; OPA Edicts Linger

One of the most important developments in Washington since V-J Day from the standpoint of the textile industry was WPB's move in revoking the controversial textile orders M-388 A, B, C, effective Oct. 1, 1945 and putting in their place a series of special M-328 B schedules for the production of 89 civilian apparel items in the low-price range. These new schedules are in addition to the original M-328 B series.

WPB officials do not expect that the new series will be needed for very long. As soon as there is a sufficiently increased supply of fabrics available to take care of the low-priced items, it is pointed out, the M-328 B schedules will be revoked. Eventually manufacturers will make what the buyer wants for competitive reasons.

A WPB spokesman estimated that a buyer's market should develop in

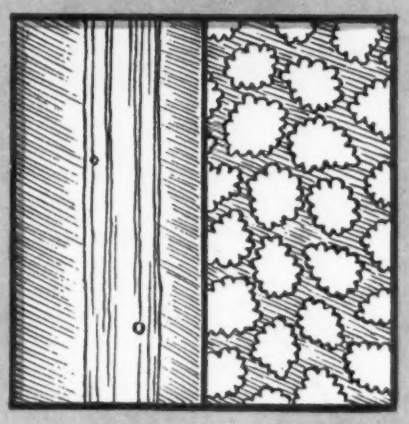
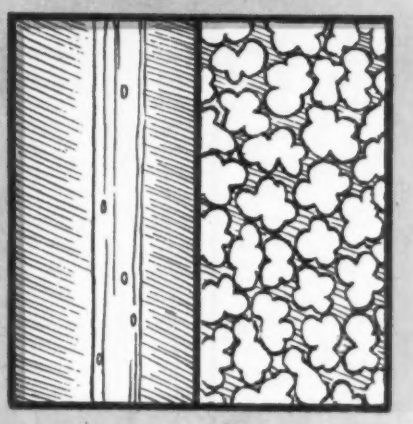
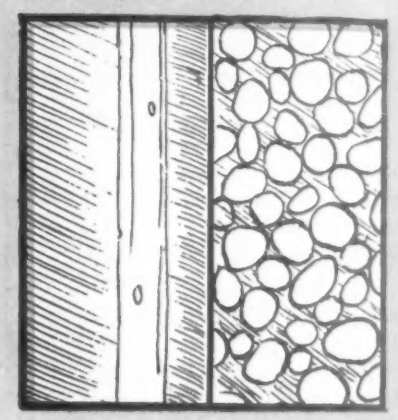
(Continued on page 173)

Textile Wo

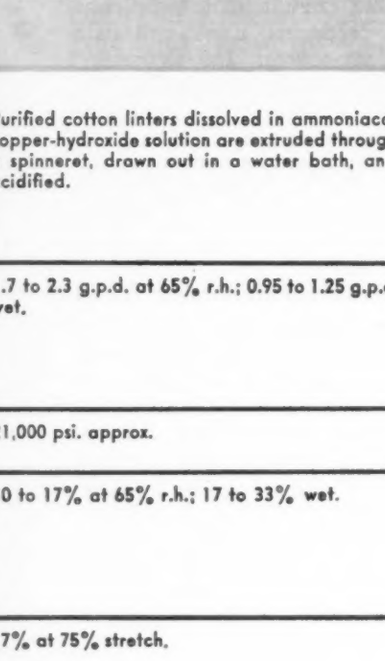
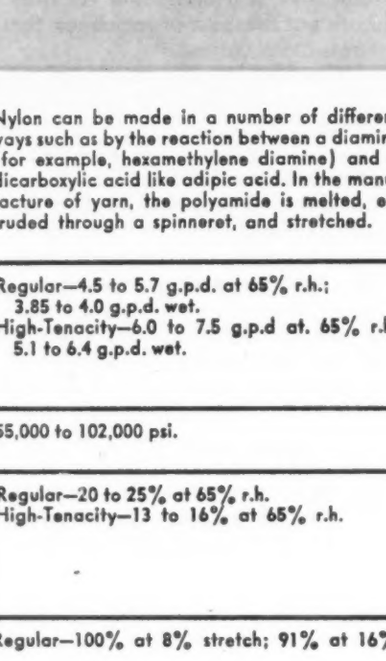
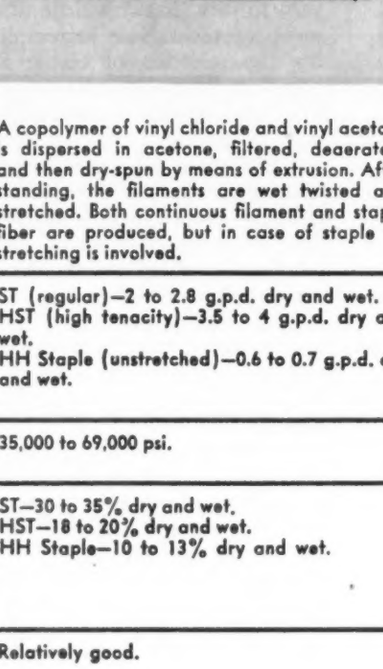
1945 REVISION *Copyrighted, 1945, by McGraw-Hill Publishing Co., Inc. (All Rights Reserved)*

Data given represent averages or ranges for commercial yarns and staples. Individual properties will vary between producers, between yarn sizes or lusters, and between different filament sizes or numbers.

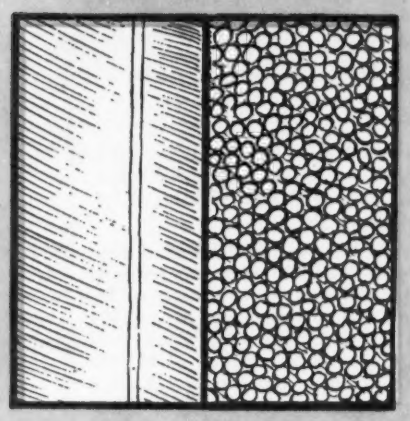
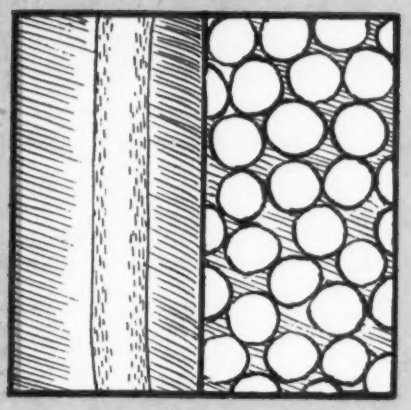
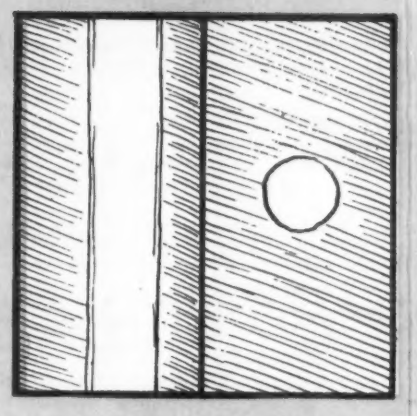
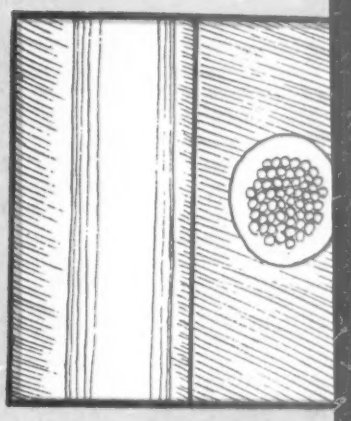
Microscopic Appearance. *For each fiber, the artist has drawn a longitudinal view at the left and a cross-sectional view at the right. Apparent sizes under the microscope will vary greatly depending upon diameter of fiber examined and magnification.*

	VISCOSE RAYON	ACETATE RAYON	CUPRAMMONIUM RAYON
			
Method of Manufacture	Wood pulp or cotton linters are treated with caustic soda and carbon bisulphide. The aged cellulose xanthate is dissolved in caustic soda and forced through spinnerets. Desulphurizing, washing, and bleaching of the yarn follow. Stretching the filaments while in a plastic state produces high-tenacity yarn.	Cotton linters or wood pulp are acetylated with acetic anhydride to form cellulose acetate which, dissolved in acetone, is extruded into warm air to form filaments. High-impact acetate is produced by a modification of the process; saponified acetate, by a special stretching and saponification process.	Purified cotton linters dissolved in ammoniacal copper-hydroxide solution are extruded through a spinneret, drawn out in a water bath, and acidified.
Tensile Strength	Regular— 1.5 to 2.4 g.p.d. at 65% r.h.; 0.7 to 1.0 g.p.d. wet. Medium-Tenacity — 2.4 to 3.0 g.p.d. at 65% r. h.; 1.2 to 1.7 g.p.d. wet. High-Tenacity — 3.0 to 4.0 g.p.d. at 65% r.h.; 1.9 to 2.4 g.p.d. wet.	Regular—1.25 to 1.5 g.p.d. at 65% r.h.; 0.8 to 0.9 g.p.d. wet. High-Impact—1.3 to 1.6 g.p.d. at 65% r.h.; 0.86 to 0.97 g.p.d. wet. Saponified—5.6 to 7 g.p.d. at 65% r.h.; 4 to 6 g.p.d. wet.	1.7 to 2.3 g.p.d. at 65% r.h.; 0.95 to 1.25 g.p.d. wet.
Tensile Stress	39,000 to 97,000 psi.	Regular—22,000 to 28,000 psi. Saponified—97,000 to 136,000 psi.	21,000 psi. approx.
Elongation at Break	Regular — 15 to 30% at 65% r.h.; 20 to 35% wet. Medium-Tenacity — 12 to 20% at 65% r.h.; 17 to 30% wet. High-Tenacity — 9 to 17% at 65% r. h.; 14 to 20% wet.	Regular—23 to 30% at 65% r.h.; 30 to 38% wet. High-Impact—45 to 50% at 65% r.h.; 60 to 70% wet. Saponified—6% at 65% r.h.; 6% wet.	10 to 17% at 65% r.h.; 17 to 33% wet.
Elastic Recovery	Regular — 30 to 74% in 1 min. at 4% stretch; 58% at 14% stretch. High-Tenacity — 100% at 2% stretch if released instantaneously; 70% if held 1 min.	Regular—48 to 65% in 1 min. at 4% stretch; 29% at 14% stretch.	17% at 75% stretch.
Average Stiffness	Regular 11.1 g.p.d. Medium-Tenacity—16.6 g.p.d. High-Tenacity—25.5 g.p.d.	Regular—5.5 g.p.d. High-Impact—3.3 g.p.d. Saponified—116.6 g.p.d.	15.5 g.p.d.
Average Toughness	Regular—0.19 g.cm. per d.cm. Medium-Tenacity—0.21 g.cm. per d.cm. High-Tenacity—0.22 g.cm. per d.cm.	Regular 0.17 g.cm. per d.cm. High-Impact—0.35 g.cm. per d.cm. Saponified—0.21 g.cm. per d.cm.	0.14 g.cm. per d.cm.
Regain (Adsorption)	13% at 70° F. and 65% r. h.; 11% is commercial standard.	6.5% at 70° F. and 65% r.h.	11% Commercial Standard.
Water Absorbency	27% at 95% r.h.; total retention: 100% to 125%.	14% at 95% r.h.; total retention 50% and up.	Approx. 27% at 95% r.h. Total retention 100 to 125%.
Specific Gravity	1.5 to 1.52	1.30 to 1.32 (saponified 1.52)	1.54
Dielectric Strength	Fair when dry.	3,000 volts per mil.	Fair when dry.
Effect of Heat	Loses strength above 300° F. Decomposes at 350° to 400° F. Does not melt. Burns relatively rapidly.	Thermoplastic. Loses strength above 200 to 220° F. Softens at 400 to 445° F.; fuses at 500° F. Sticking point 350° to 375° F. Burns relatively slowly.	Decomposes at above 300° F. Burns relatively rapidly.
Effect of Age	Slight.	Slight on tensile; none on color.	Slight.
Effect of Sunlight	Loses tensile strength after prolonged exposure, very little discoloration.	Slight on tensile; none on color.	Loses strength on prolonged exposure.
Effect of Acids	Similar to cotton. Hot dilute or cold concen-	Concentrated solutions of strong acids de-	Similar to viscose. Hot dilute or cold concen-

World's SYN

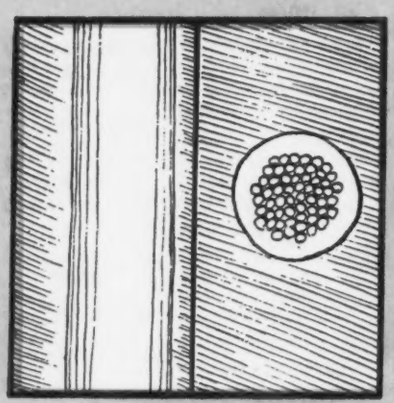
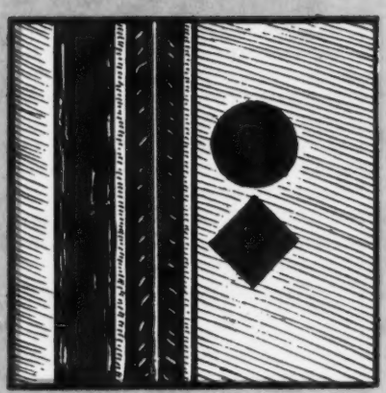
CUPRAMMONIUM RAYON	NYLON	VINYON
		
Purified cotton linters dissolved in ammoniacal copper-hydroxide solution are extruded through a spinneret, drawn out in a water bath, and acidified.	Nylon can be made in a number of different ways such as by the reaction between a diamine (for example, hexamethylene diamine) and a dicarboxylic acid like adipic acid. In the manufacture of yarn, the polyamide is melted, extruded through a spinneret, and stretched.	A copolymer of vinyl chloride and vinyl acetate is dispersed in acetone, filtered, deaerated, and then dry-spun by means of extrusion. After standing, the filaments are wet twisted and stretched. Both continuous filament and staple fiber are produced, but in case of staple no stretching is involved.
1.7 to 2.3 g.p.d. at 65% r.h.; 0.95 to 1.25 g.p.d. wet.	Regular—4.5 to 5.7 g.p.d. at 65% r.h.; 3.85 to 4.0 g.p.d. wet. High-Tenacity—6.0 to 7.5 g.p.d at. 65% r.h., 5.1 to 6.4 g.p.d. wet.	ST (regular)—2 to 2.8 g.p.d. dry and wet. HST (high tenacity)—3.5 to 4 g.p.d. dry and wet. HH Staple (unstretched)—0.6 to 0.7 g.p.d. dry and wet.
21,000 psi. approx.	55,000 to 102,000 psi.	35,000 to 69,000 psi.
10 to 17% at 65% r.h.; 17 to 33% wet.	Regular—20 to 25% at 65% r.h. High-Tenacity—13 to 16% at 65% r.h.	ST—30 to 35% dry and wet. HST—18 to 20% dry and wet. HH Staple—10 to 13% dry and wet.
17% at 75% stretch.	Regular—100% at 8% stretch; 91% at 16%.	Relatively good.
15.5 g.p.d.	Regular—24 g.p.d. High-Tenacity—45 g.p.d.	ST—7.7 g.p.d. HST—2.4 g.p.d.
0.14 g.cm. per d.cm.	Regular—0.5 g.cm. per d.cm. High-Tenacity—0.45 g.cm. per d.cm.	ST—3.3 g.cm. per d.cm. HST—2.7 g.cm. per d.cm.
11% Commercial Standard.	3.8% at 70° F. and 65% r.h.	None.
Approx. 27% at 95% r.h. Total retention 100 to 125%.	6% at 95% r.h.	0.1%
1.54	1.14	1.33
Fair when dry.	Dielectric constant: 4 at 1,000 cycles at 18% r.h. and 70° F.	650 volts per mil. (60 cycle).
Decomposes at above 300° F. Burns relatively rapidly.	Melts at 482° F. Yellows slightly at 302° F. held 5 hr.	Melts at 260° F., becomes tacky and shrinks at 150° F. Will not support combustion.
Slight.	Virtually none.	None.
Loses strength on prolonged exposure.	Prolonged exposure decreases tensile strength.	None.
Similar to viscose. Hot dilute or cold concen-	Boiling in 5% hydrochloric acid ultimately	None.

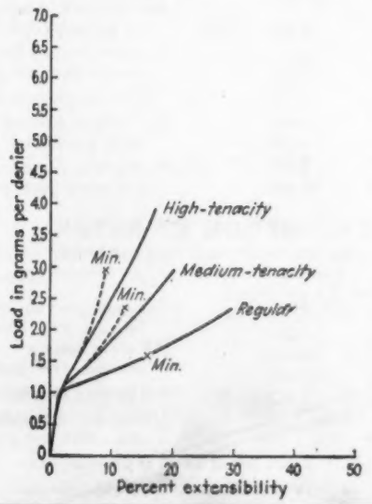
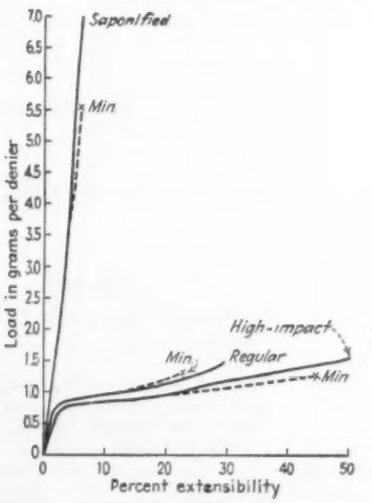
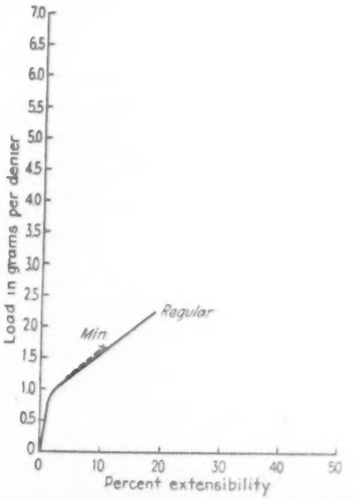
NTHETIC FIBER TA

	FIBERGLAS	ARALAC	VINYLIDENE	PLEXON
				
	Special composition glass marbles are melted in an electric furnace which has many minute holes in the base, to form continuous fibers. The fibers are attenuated to the desired size.	Milk casein is dissolved in an alkaline solution and extruded into an acid bath. The resulting continuous filaments are hardened, set, and cut.	Petroleum and salt are treated to produce ethylene and chlorine. They are combined to form vinylidene chloride which is copolymerized with vinyl chloride. The resulting resin is melted and extruded to form filaments which are then orientated.	Rayon, cotton, linen, Fiberglas, and yarns are coated with various types of of which 17 different formulas are cur employed. Depth of coating can be vari produce effect desired. Data following is b on average of yarns produced during the
	6.3 to 6.9 g.p.d. dry; 6.0 g.p.d. wet.	0.8 to 1.0 g.p.d. dry. Substantially less wet.	4 to 6 g.p.d. dry or wet.	1.5 to 3 g.p.d. at 65% r.h.; 1.3 to 2.5 wet.
	217,000 to 1,100,000 psi.	13,000 psi. approx.	25,000 to 40,000 psi.	Generally high.
	2 to 3.75% dry.	Approx. 50% dry.	20 to 30% dry or wet.	3 to 15% at 65% r.h.; 3 to 14% wet.
	100% at 3% stretch.	Very little.	Good although slow.	–
	322 g.p.d.	2.2 g.p.d.	20 g.p.d.	Varies.
	0.07 g.cm. per d.cm.	0.15 g.cm. per d.cm.	0.62 g.cm. per d.cm.	Varies.
	No moisture.	13% at 70° F. and 65% r.h.	None.	2 to 5% at 65% r.h.
	No absorption except less than 0.1% on surface.	About 25% at 95% r.h.	Less than 0.1% (surface).	Varies.
	2.54	1.29	1.6 to 1.75	Approx. 1.2
	Excellent.	400 to 700	500 volts per mil.	Fair.
	Will not burn. Strength begins to decrease at 600° F. and continues to decline to limiting temperature of about 1000 to 1500° F.	Loses strength above 212° F. Decomposes at 450° F. Relatively slow burning rate.	Resistant up to 170° F. and softens at 200° F. At 212° F. loses approx. 50% of its tensile strength; melts at 240 to 280° F. Decomposes at 350° F. Self-extinguishing.	Inflammable to self-extinguishing (depend on coating). Decomposes at 140 to 200 (depending on coating).
	None.	None.	None.	Slight.
	None.	Similar to wool.	Darkens slightly.	Slight.
	Attacked by hydrofluoric and hot phosphoric	Decomposed by strong acids; stable to weak	Unaffected by most	

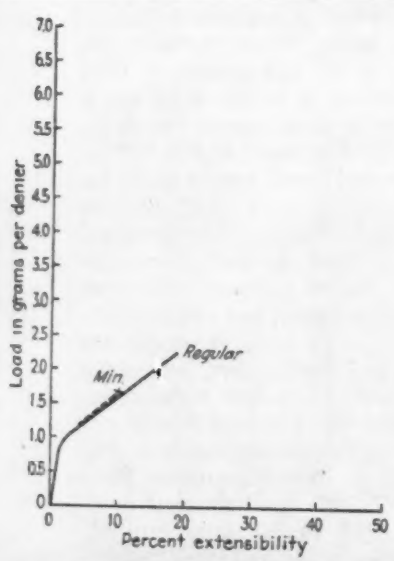
TABLE

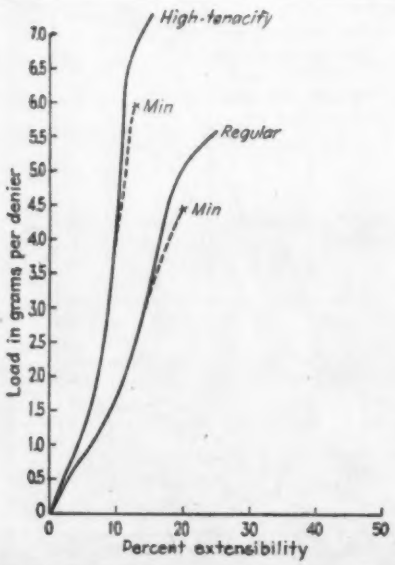
Compiled by C. W. BENDIGO, Executive Editor

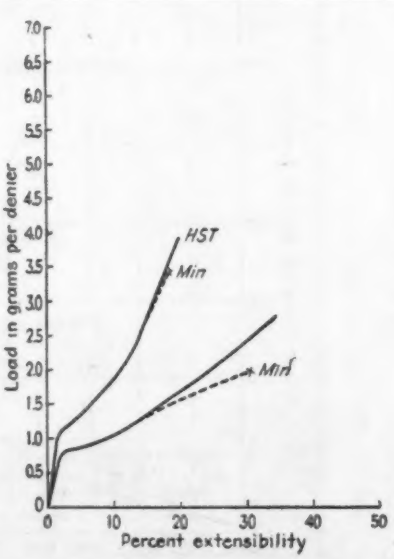
	PLEXON	SYNTHETIC RUBBER	
			*Reprints of this chart are available at 25c each. Address TEXTILE WORLD, 330 West 42nd Street, New York 18, N. Y.* **Microscopic Appearance.** *For each fiber, the artist has drawn a longitudinal view at the left and a cross-sectional view at the right. Apparent sizes under the microscope will vary greatly depending upon diameter of fiber examined and magnification.*
	Rayon, cotton, linen, Fiberglas, and other yarns are coated with various types of resins of which 17 different formulas are currently employed. Depth of coating can be varied to produce effect desired. Data following is based on average of yarns produced during the war.	Neoprene rubber is extruded to form round monofilament threads, or thin sheets of it are cut to form square threads. Round yarns also formed by rolling thin strips. Compounding of the neoprene varies according to the thread properties wanted.	*Method of Manufacture*
	1.5 to 3 g.p.d. at 65% r.h.; 1.3 to 2.5 g.p.d. wet.	Approx. 0.15 to 0.2 g.p.d.	*Tensile Strength*
	Generally high.	2,600 to 4,500 psi.	*Tensile Stress*
	3 to 15% at 65% r.h.; 3 to 14% wet.	700 to 800%	*Elongation at Break*
	—	100%	*Elastic Recovery*
	Varies.	—	*Average Stiffness*
	Varies.	—	*Average Toughness*
	2 to 5% at 65% r.h.	None.	*Regain (Adsorption)*
	Varies.	Only surface absorption.	*Water Absorbency*
	Approx. 1.2	1.25 to 1.45 depending upon compounding.	*Specific Gravity*
	Fair.	Very good.	*Dielectric Strength*
	Inflammable to self-extinguishing (depending on coating). Decomposes at 140 to 200° F. (depending on coating).	Highly resistant to heat. Burns slowly. Decomposes at 1000° F. Not brittle to —70°F.	*Effect of Heat*
	Slight.	Very little.	*Effect of Age*
	Slight.	Very little.	*Effect of Sunlight*
	Weak, from no effect to slight; strong, from	Varies with compounding.	

Dielectric Strength	Fair when dry.	5,000 volts per mil.	Fair when dry.
Effect of Heat	Loses strength above 300° F. Decomposes at 350° to 400° F. Does not melt. Burns relatively rapidly.	Thermoplastic. Loses strength above 200 to 220° F. Softens at 400 to 445° F.; fuses at 500° F. Sticking point 350° to 375° F. Burns relatively slowly.	Decomposes at above 300° F. Burns relatively rapidly.
Effect of Age	Slight.	Slight on tensile; none on color.	Slight.
Effect of Sunlight	Loses tensile strength after prolonged exposure, very little discoloration.	Slight on tensile; none on color.	Loses strength on prolonged exposure.
Effect of Acids	Similar to cotton. Hot dilute or cold concentrated disintegrate fiber.	Concentrated solutions of strong acids decompose.	Similar to viscose. Hot dilute or cold concentrated disintegrate fiber.
Effect of Alkalis	Strong solutions cause swelling and reduce strength.	Strong alkalis saponify into regenerated cellulose.	Dilute has little affect. Strong solutions cause swelling, loss of strength, and ultimate disintegration.
Effect of Other Chemicals	Attacked by strong oxidizing agents. Not damaged by hypochlorite or peroxide bleaching solutions.	Attacked by strong oxidizing agents. Not damaged by hypochlorite or peroxide bleaching solutions. Soluble in phenol.	Not attacked by oxidizing agents. Not damaged by hypochlorite or peroxide bleaching solutions.
Effect of Organic Solvents	Generally insoluble. Soluble in cuprammonium solution and some other compounds.	Soluble in acetone, concentrated and glacial acetic acid.	Insoluble. Soluble in cuprammonium solutions and some other compounds.
Dyes Used	Same classes as cotton for regular viscose. Semi- and high-tenacity are more difficult to dye.	Special acetate rayon dyes developed. Affinity also for some acid and basic dyes; pigment dyes; solvent (swelling) dyeing. Saponified is more difficult to dye (requires more dyestuff), acetate dyes not suitable but some vat and direct are.	Similar to viscose rayon and cotton.
Resistance to Moths	Wholly.	Wholly.	Wholly.
Resistance to Mildew	Attacked.	Highly (discoloration only).	Attacked.
Types and Sizes Produced	Continuous filament 40 to 2200 den., 14 to 960 fil.; bright, semi-dull, and dull. Staple 1 to 25 den. in lengths of 1 to 8 in. Tow 1½ to 20 den. Varied-length staple.	Continuous filament 30 to 300 den., 11 to 104 fil., bright, dull, spun dyed. Staple 1½ to 20 den., 15/16 to 7 in., bright, dull, spun dyed. 1/16-in. floc.	Continuous filament 30 to 300 den., 30 to 100 fil. Bright and semi-dull.
Typical Uses	Yarn used with crepe, voile, and low twists for many woven and knitted fabrics (the only synthetic yarn being creped commercially); hosiery, tire cord. Staple used alone and in blends for dress goods and sports wear; in blends for rugs, blankets, upholstery.	Dress goods, linings, hosiery, underwear, fused fabrics. Staple (often blended) for men's and women's wear, blankets, upholstery, and carpets. High-impact and saponified used for military purposes such as parachute canopies.	Civilian: knitted and woven material for wearing apparel such as dress fabrics, gloves, and hosiery; upholstry and decorative fabrics. Military: flare chute canopies, emblems.
Producers and Trade-Names	American Enka Corp., American Viscose Corp., Delaware Rayon Corp., E. I. du Pont de Nemours & Co., Inc., Hartford Rayon Corp., Industrial Rayon Corp., National Rayon Co., New Bedford Rayon Corp., North American Rayon Corp., Skenandoa Rayon Corp., Synthetic Yarns, Inc., Tubize Rayon Corp. (For trade names see table of commercial yarns on opposite side of sheet)	American Viscose Corp.—Seraceta, Seraceta Fibro (staple). Celanese Corp. of America—Celanese, Fortisan (saponified). E. I. du Pont de Nemours & Co., Inc.—Acele, Fiber "B" (saponified). Tennessee Eastman Corp.—Eastman Acetate Rayon, Koda (filament), Teca (staple). Tubize Rayon Corp.	American Bemberg Corp.—Bemberg (all), Matesa (semi-dull). United States Rayon Co.
Typical Stress-Strain Curves			

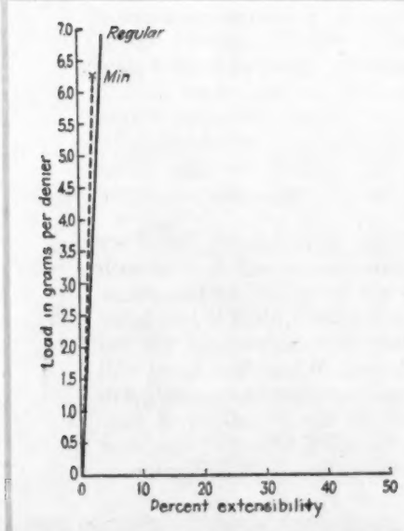
	r.h. and 70° F.	
Decomposes at above 300° F. Burns relatively rapidly.	Melts at 482° F. Yellows slightly at 302° F. held 5 hr.	Melts at 260° F., becomes tacky and shrinks at 150° F. Will not support combustion.
Slight.	Virtually none.	None.
Loses strength on prolonged exposure.	Prolonged exposure decreases tensile strength.	None.
Similar to viscose. Hot dilute or cold concentrated disintegrate fiber.	Boiling in 5% hydrochloric acid ultimately causes disintegration. Dissolved by formic acid. Disintegrated by cold concentrated nitric acid.	None.
Dilute has little affect. Strong solutions cause swelling, loss of strength, and ultimate disintegration.	Substantially inert.	None.
Not attacked by oxidizing agents. Not damaged by hypochlorite or peroxide bleaching solutions.	Dissolved by phenol, meta-cresol, and cresylic acid. Bleaching materials have deleterious effect at room temperatures.	Generally resistant.
Insoluble. Soluble in cuprammonium solutions and some other compounds.	Soluble in xylenol.	Soluble in ketones and some chlorinated hydrocarbons; swells and softens in ethers, esters, aromatic hydrocarbons, dioxan propylene oxide.
Similar to viscose rayon and cotton.	Direct, acid, acetate, pigment, chrome, and other classes.	Dyed with dispersed dyes with aid of certain swelling agents, solvent methods, pigment dyeing.
Wholly.	Wholly. (Larvae will cut way out if trapped.)	Wholly.
Attacked.	Wholly. (Material on nylon may be attacked.)	Wholly.
Continuous filament 30 to 300 den., 30 to 100 fil. Bright and semi-dull.	Continuous filament 30 to 210 den., 10 to 68 fil. Monofilaments.	Continuous filament 40 to 250 den., 28 to 216 fil. HH staple 3 den., 1 in. to 5 in.
Civilian: knitted and woven material for wearing apparel such as dress fabrics, gloves, and hosiery; upholstry and decorative fabrics. Military: flare chute canopies, emblems.	Military: parachute canopy fabric, base for coated fabrics, tire cord, rope, nets, webbing, thread, screening. Expected civilian: most of foregoing, hosiery, dress goods.	Filter fabrics, nets and seines, clothing and fabrics for protection against acids and alkalis, fusible shape-retaining fabrics. Staple used as bonding agent in combination with other fibers.
American Bemberg Corp.*— Bemberg (all), Matesa (semi-dull). United States Rayon Co.	E. I. du Pont de Nemours & Co., Inc.—Nylon is a generic term for any long-chain synthetic polymeric amide which has recurring amide groups as an integral part of the main polymer chain, and which is capable of being formed into a filament in which the structural elements are oriented in the direction of the axis.	American Viscose Corp.—Vinyon ST, Vinyon HST (high-tenacity), and Vinyon HH (staple). (Vinyon E no longer produced.)

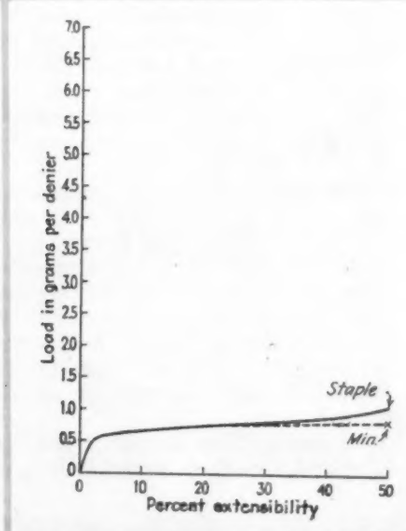


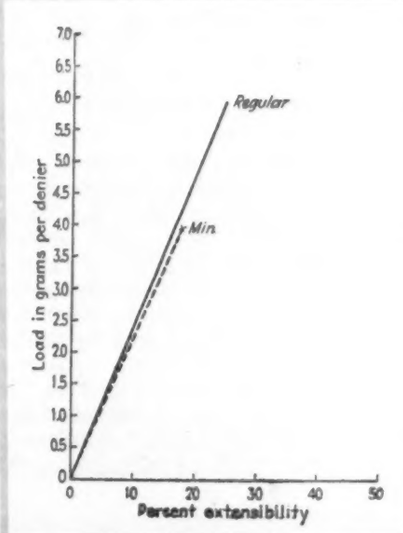


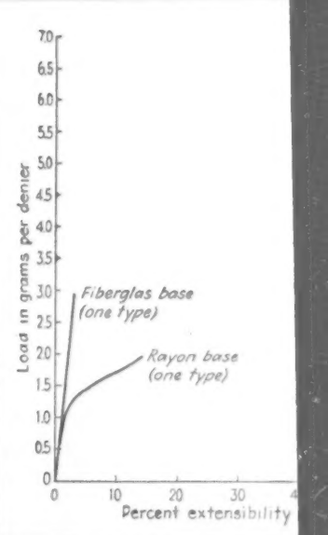


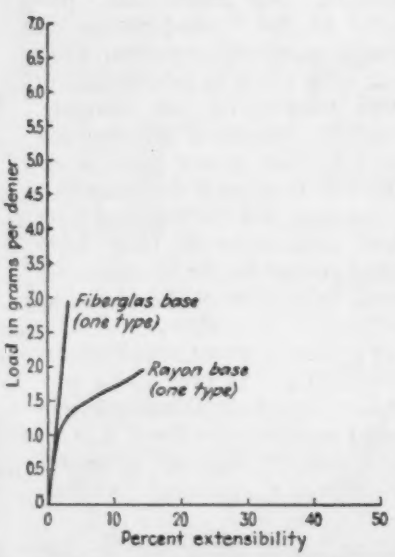
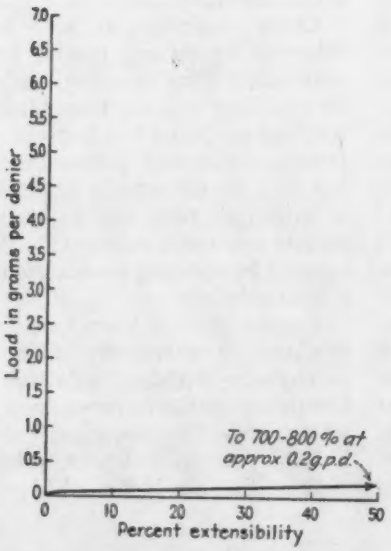
shrinks at	Will not burn. Strength begins to decrease at 600° F. and continues to decline to limiting temperature of about 1000 to 1500° F.	Loses strength above 212° F. Decomposes at 450° F. Relatively slow burning rate.	Resistant up to 170° F. and softens at 200° F. At 212° F. loses approx. 50% of its tensile strength; melts at 240 to 280° F. Decomposes at 350° F. Self-extinguishing.	Inflammable to self-extinguishing on coating). Decomposes at 14 (depending on coating).
	None.	None.	None.	Slight.
	None.	Similar to wool.	Darkens slightly.	Slight.
	Attacked by hydrofluoric and hot phosphoric only.	Decomposed by strong acids; stable to weak.	Unaffected by most.	Weak, from no effect to slight; no effect to decomposition (coating).
	Attacked by hot solutions of weak alkalis and cold solutions of strong alkalis.	Cold or weak have little effect for short period, prolonged contact causes brittleness; hot or strong alkalis decompose.	Unaffected by most; limited resistance to ammonia.	Weak, from no effect to slight; no effect to decomposition (coating).
	Generally resistant.	Can be bleached with hydrogen peroxide or sodium bisulphite.	Generally good resistance.	Can be made resistant to most specified.
ed hydro-rs, esters, propylene	Insoluble.	Insoluble.	Insoluble in most, but swelled or softened by oxygen-bearing solvents such as cyclohexanone and dioxan at elevated temperatures.	Acetone, ethyl acetate, and solvents (depending on coating)
of certain pigment	Resin-bonded pigments.	Dyed by most classes except some direct. Vat dyes unsuitable because of alkali required.	Colored before extrusion.	Color generally applied at time such as with durable pigments.
	Wholly.	Attacked.	Wholly.	Good.
	Not attacked. (Binder may be, however.)	Protected.	Wholly.	Good.
28 to 216	Fiber diameter 0.00023 in. to 0.00028 in. Continuous filament 50 den. and up, 102 and 204 fil. per individual strand. Small amount of staple fiber.	Staple only. Equivalent of 50s, 60s, and 70s wool and 15 microns (theoretical 110s wool); lengths from ½ to 6 in. in ¼-in. graduations.	Monofilaments 0.004 to 0.08 in.; rattan-like strips.	Currently, diameters 0.005 to 0.
thing and nd alkalis, le used as ther fibers.	Electrical insulation, plastic reinforcing, fireproof decorative materials, filter cloths.	Particularly suited for blending with other fibers to make coatings, suitings, dress goods, interlinings, blankets, underwear, socks.	Screening, cords for racquets and the like, upholstery, curtains, filter cloth, shoes and handbag fabric.	Used in fabrics for handbags, sha ies, draperies, fashion accessories
ST, Vinyon H (staple).	Owens-Corning Fiberglas Corp.—Fiberglas.	Aralac, Inc.—Aralac.	Firestone Industrial Products Co.—Velon. Pierce Plastics Div., The Visking Corp.— Sapphire (from Dow's saran powder). The National Plastics Products Co.—Saran.	Freydberg Bros.-Strauss — Plexon









	Very good.	**Dielectric Strength**
Inflammable to self-extinguishing (depending on coating). Decomposes at 140 to 200° F. (depending on coating).	Highly resistant to heat. Burns slowly. Decomposes at 1000° F. Not brittle to —70°F.	**Effect of Heat**
Slight.	Very little.	**Effect of Age**
Slight.	Very little.	**Effect of Sunlight**
Weak, from no effect to slight; strong, from no effect to decomposition (depending on coating).	Varies with compounding.	**Effect of Acids**
Weak, from no effect to slight; strong, from no effect to decomposition (depending on coating).	Varies with compounding.	**Effect of Alkalis**
Can be made resistant to most chemicals, as specified.	Varies with compounding.	**Effect of Other Chemicals**
Acetone, ethyl acetate, and other lacquer solvents (depending on coating).	Resistant to petroleum but soluble in aromatic oils.	**Effect of Organic Solvents**
Color generally applied at time of coating, such as with durable pigments.	Color controlled, but with difficulty, during compounding.	**Dyes Used**
Good.	Fully.	**Resistance to Moths**
Good.	Fully.	**Resistance to Mildew**
Currently, diameters 0.005 to 0.065 in.	Cut 24, 30, 36, 42, 50, 58, 70, 85, 112, 120, 140. Round 22, 26, 30, 37, 44, 50, 65, 75, 100, 120. (Figures refer to number of threads side-by-side to measure 1 in.)	**Types and Sizes Produced**
Used in fabrics for handbags, shoes, upholsteries, draperies, fashion accessories.	Covered for wide variety of elastic fabrics, cords, and braids used in foundation garments, suspenders, garters, sock tops, sporting goods. Some used uncovered.	**Typical Uses**
Freydberg Bros.-Strauss — Plexon	Easthampton Rubber Thread Co. Firestone Tire & Rubber Co.—Contro. B. F. Goodrich Co. Para Thread Co., Inc.—Paralactic (cut threads). U. S. Rubber Co.—Lyntron (Extruded round).	**Producers and Trade-Names**
		**Typical Stress-Strain Curves**

1945 TABLE OF COMMERCIAL SYNTHETI

CONTINUOUS FILAMENT

Manufacturer	*Up to 75 den.*	*100 to 125 den.*	*150 to 200 den.*	*210 to 450 den.*	*600 den. and up*	*Tra*
VISCOSE RAYON						
American Enka Corp.	75/18, 75/30 75/45	100/40, 100/60 100/100, 125/40	150/40, 150/90	250/60, 300/60	1100/480[ho]	Enka Rayon, Englo, Ten
American Viscose Corp.	40/14, 50/14 75/30	100/40, 100/60	150/40, 150/60[m] 150/90	250/120, 300/44 300/120[m], 450/100	600/100, 1100/490[ho] 1150/490[m]	Crown, Chall Tenasso M
Delaware Rayon Co.		100/24, 100/60	150/44			Delray
E. I. du Pont de Nemours & Co., Inc.	50/20[m], 70/30 70/45	100/40, 100/60 125/40	150/60[m], 150/40 150/90, 200/80 200/55	350/50, 275/120[h] 300/50, 300/80 300/120[m], 450/72	600/96, 900/50 900/144, 1100/480[ho] 2200/960[ho]	Dupont Rayo
Hartford Rayon Corp.				300/44, 450/66	600/88, 900/66	
Industrial Rayon Corp.	50/14, 75/20 75/30[m]	100/20, 100/40[m] 100/60, 125/34	150/30, 150/40[m] 150/60, 150/90 200/40, 200/80	250/60, 275/120 300/44, 300/60 300/80[m], 450/60	1100/480[ho]	Dul-tone, Sp Premier, T
National Rayon Corp.	75/30	100/30	150/30			
New Bedford Rayon Co.			150/40	300/40		
North American Rayon Corp.	50/24[mo], 75/30[m] 75/60	100/40, 100/60 125/42, 125/52	150/42, 150/60 150/100	250/46, 300/75[mo]	600/92, 900/? 1100/480[ho]	Narco, High Super Narco
Skenandoa Rayon Corp.		100/40[m]	150/40, 150/90			Skenandoa R
Synthetic Yarns, Inc.			150/48			
Tubize Rayon Corp.	50/16, 75/30[h]	100/40, 100/60	150/40, 150/60 150/90			Tubize Rayo Hygram
ACETATE RAYON						
American Viscose Corp.	45/14, 55/14 75/20	100/28, 120/32 120/36	150/41, 200/60	300/80		Seraceta
Celanese Corp. of Amer.	30/40[s], 45/13 55/15, 75/20	100/26, 100/40 120/32	150/40, 200/52	300/80		Celanese, Fo
E. I. du Pont de Nemours & Co., Inc.	55/18, 75/24 75/50	100/40, 120/50	150/60, 200/64			Acele, Fiber
Tennessee Eastman Corp.	45/11, 55/20 75/19, 75/26 75/34, 75/49	100/25, 100/34 120/30, 120/40	150/38, 150/52 200/68	300/104, 340/52[e]		Koda, Eastm
Tubize Rayon Corp.	50/13	120/40				
CUPRAMMONIUM RAYON						
American Bemberg Corp.	30/74, 35/60 40/30, 50/36 55/45, 65/60	100/74				Bemberg, M
United States Rayon Corp.				300/100		
NYLON						
E. I. du Pont de Nemours & Co., Inc.	30/10, 40/13 70/23, 70/34	105/34		210/34, 210/68		Nylon (gene
VINYON						
American Viscose Corp.	40/28[ho]		200/140[ho]	250/216		Vinyon ST, V (Vinyon E no
FIBERGLAS						
Owens-Corning Fiberglas Corp.	Type ECD — 900-1/2 (100/204), 450-1/0 (100/204), 450-1/2 (200/408), 450-1/3 (300/612), 450-2/3 (600/1224), etc. Type ECE — 225-1/0 (50/204), 225-1/2 (100/408), 225-1/3 (150/612), 225-2/2 (200/816), 225-2/5 (500/2040).				(First figures are Fiberglas designations; in parentheses are approximate deniers and filaments.)	Fiberglas
VINYLIDENE						
Firestone Industrial Products Co.	Monofilaments in diameters of 0.004, 0.006, 0.008, 0.012, 0.015, 0.02, 0.03, 0.04, 0.05, 0.06, 0.07, 0.08 in. Also rattan-like strips.					Velon
The National Plastic Products Co.	Monofilaments in diameters of 0.005 to 0.05 and rattan-like strips.					Saran
Pierce Plastics Div. of The Visking Corp.	Monofilaments in diameters of 0.008, 0.010, 0.012, 0.015, 0.020, 0.025, 0.030, 0.035, 0.04, 0.05, 0.06, 0.07, 0.08.					Sapphire
NEOPRENE RUBBER						
Easthampton Rubber Thread Co.	Cut sizes (fractions of an inch): 24, 30, 36, 42, 50, 58, 70, 85, 112, 120, 140. Round sizes (diameter in fractions of an inch): 22, 26, 30, 37, 44, 50, 65, 75, 100, 120.					
Firestone Tire & Rubber Co.	Cut sizes (fractions of an inch): 24, 30, 36, 42, 50, 58, 70, 85. Round sizes (diameter in fractions of an inch): 65, 75, 100					Contro
B. F. Goodrich Co.	Cut sizes (fractions of an inch): 24, 30, 36, 42, 50, 58, 70, 85, 112.					
Para Thread Co., Inc.	Cut sizes (fractions of an inch): 24, 30, 36, 42, 50, 58, 70, 85, 112, 120, 140.					Paralactic
United States Rubber Co.	Cut sizes (fractions of an inch): 24, 30, 36, 42, 50, 58, 70, 85, 112, 120, 140. Round sizes (diameter in fractions of an inch): 22, 26, 30, 37, 44, 50, 65, 75, 100, 120.					Lyntron (Ex
PLEXON						

IETIC YARNS AND FIBERS

Trade-names	Manufacturer	Deniers and Lengths (Deniers given first in units and decimals followed by lengths in inches and fractions.)
	STAPLE FIBER	
	VISCOSE RAYON	
nka Rayon, Briglo, Perlglo, Englo, Tempra(ho)	American Viscose Corp.	Fibro Bright: 1.5-1, 1.5-1 5/16, 1.5-2, 1.5-4½, 3-1, 3-1 5/16, 3-2, 5.5-1, 5.5-1 5/16, 5.5-1½ to 2¾, 5.5-3, 5.5-3½ to 6, 5.5-5 to 7. Fibro Dull: 1.5-1 5/16, 1.5-2, 3-1 5/16, 3-2, 5.5-1½ to 2¾, 5.5-2, 5.5-3½ to 5, 5.5-3½ to 6, 5.5-5. Avisco Bright: 1-1 5/16, 1.25-⅞, 1.5-1 5/16 Tufton Semi-dull: 5.5-3½, 10-3½, 20-3½. Tow, Bright: 1.5 den., 380,000 total den.
Crown, Chalkelle, Dulesco, Tenasso M(mo), Raflex(ho)		
Delray		
Dupont Rayon, Cordura(ho)		
	E. I. du Pont de Nemours & Co., Inc.	Bright: 1.5-1½, 1.5-4½, 1.5-1⅞, 3-1½, 5.5-1, 5.5-1½, 5.5-2, 5.5-3½, 10-3½. Dull: 1.5-1½, 3-1½, 3-2, 3-2½, 3-4, 5.5-2, 5.5-2½, 5.5-4. Fiber "D" Bright: 20-3½. Tow, Bright: 1.5 den., type 53-8,004 total den.; 1.5 den., type 126-18,900 total den.; 1.5 den.; type 756-113,400 total den.; 3 den., type 539-161,712 total den.; 5.5 den., type 302-166,584 total den.; 10 den., type 192-192,000 total den. Tow, Dull: 1.5 den, type 756-113,400 total den.; 3 den., type 539-161,712 total den.; 5.5 den., type 302-166,584 total den. Fiber "D" Tow, Bright: 20 den., type 103-207,360 total den.; 20 den., type 207-414,720 total den.
Dul-tone, Spunlo, Spun-Black, Premier, Tyron(ho)		
Narco, High Narco(mo) Super Narco(ho), Xtra-Dul		
Shenandoa Rayon, Veri Dul		
Tubize Rayon, Chardonize, Hygram		
	ACETATE RAYON	
Seraceta	American Viscose Corp.	Seraceta staple out of production.
Celanese, Fortisan(s)	Celanese Corp. of Amer.	Celanese Lanese: 3, 5.5, 8, and 12 den. in lengths 1⅛ to 2 in.
Acele, Fiber "B"(s)	Tennessee Eastman Corp.	Teca Bright, Dull, Tinted: 3, 5, 8, 12, 16, and 20 den. cut to length for spinning system to be used.
Koda, Eastman Acetate Rayon		
	VINYON	
	American Viscose Corp.	Vinyon HH: 3 den., 1 in. to 5 in. (unstretched).
	FIBERGLAS	
Bemberg, Matesa	Owens-Corning Fiberglas Corp.	Limited production. Average length 9 in. Supplied in yarn form in variety of sizes.
	ARALAC	
Nylon (generic)	Aralac, Inc.	Equivalent of 50s, 60s, and 70s, wool (7.5, and 3 den. respectively) in lengths ½ in. to 6 in. in ¼-in. gradations. Also 15-micron staple (theoretical 110s wool—1½ den.).
Vinyon ST, Vinyon HST(ho) (Vinyon E no longer produced.)		
Fiberglas		
Velon		
Saran		
Sapphire		
Contro		
Paralactic		
Lyntron (Extruded, round)		

Turning Point for SYNTHETIC FIBERS

INFLUENCES OF WORLD WAR II are strongly reflected in this table of commercial synthetic yarns, although it was compiled after the Japanese surrender. Unquestionably, within six months there will be many changes, some of which are already indicated.

One trend will continue, that toward strong yarns; another will not, that toward restricted denier ranges. The main development in strong yarns will be in the finer deniers, with the notable exception of tire-cord yarn. (The full development of synthetic yarn for tire-cord is not apparent, as there is only one listing of 2,200 den.)

Relatively few strong viscose-rayon yarns are listed here, but it is entirely possible that the "strong" yarns of today will become the "regular" yarns of tomorrow, just as today the production of staple fiber is relatively small compared to what it will be in the near future.

The relatively little acetate-rayon staple fiber listed and the relatively fewer listings of continuous-filament acetate might be misleading, particularly the latter. The proportion of acetate rayon to viscose rayon undoubtedly will increase, as there is no indication of expansion in viscose-rayon plants comparable to the expansion plans of the five acetate-rayon producers.

Less predictable are the various monofilaments listed. For specialized

Properties of

SYNTHETI

Key to Proper Use

HIGHLIGHTS: *Results desired s*
Chart shows relationship of ten bei
characteristics listed — Experimento

THE PROPERTIES of synthetic fibers are responsible for their present acceptance and widespread use in textiles and will be the deciding factors in their future use. Those properties vary so considerably from yarn to yarn that it is little wonder most top technicians are emphasizing the selection of textile fibers based on their particular properties as related to the job the fabric or web is supposed to perform. Synthetic fibers can be produced with specific properties for particular needs, as can be seen in this folder. The range possible seems limited only by the intensity of the demand for particular properties.

True, no synthetic fiber has all of the highly desirable properties; and even the most widely publicized has more limitations than is generally attributed to it, as its producers well know. Because the characteristics of synthetic fibers do vary so much from one type to another, the chart on the opposite side of this sheet has been made.

TEXTILE WORLD listed the properties of synthetic fibers in 1939 and again two years ago. So many requests for the 19- ceived that, althoug several times, a st maintained. This a thorough revisi porates not only c time but also ad tion, not the least stress-strain curves.

The form used give quick side-by- of all the comme able, property by stress-strain curves cause they show p virtually impossibl any other form. F indicate the point manent and serious in the various ray the greatly differ Fortisan to loadi havior of nylon, t relatively serious str glas, and — most i the effect of variou to ultimate ruptur are for yarn cond r.h. and 70° F.

Because of the drape and durabili

21st ANNUAL SYN

THIS FOLDED CHART compares the properties of the commercial synthetic fibers (on the other side) and lists all commercial synthetic yarns available, pertinent statistics, new fibers,

Synthetics Turn Towa with NEW O

Properties of

SYNTHETIC FIBERS—

Key to Proper Use and Potentialities

HIGHLIGHTS: *Results desired should determine fiber selected — Chart shows relationship of ten being commercially produced — New characteristics listed — Experimental fibers reported on separately.*

THE PROPERTIES of synthetic fibers are responsible for their present acceptance and widespread use in textiles and will be the deciding factors in their future use. Those properties vary so considerably from yarn to yarn that it is little wonder most top technicians are emphasizing the selection of textile fibers based on their particular properties as related to the job the fabric or web is supposed to perform. Synthetic fibers can be produced with specific properties for particular needs, as can be seen in this folder. The range possible seems limited only by the intensity of the demand for particular properties.

True, no synthetic fiber has all of the highly desirable properties; and even the most widely publicized has more limitations than is generally attributed to it, as its producers well know. Because the characteristics of synthetic fibers do vary so much from one type to another, the chart on the opposite side of this sheet has been made.

TEXTILE WORLD listed the properties of synthetic fibers in 1939 and again two years ago. So many requests for the 1943 chart were received that, although it was reprinted several times, a stock could not be maintained. This new tabulation is a thorough revision which incorporates not only changes since that time but also additional information, not the least of which are the stress-strain curves.

The form used was selected to give quick side-by-side comparison of all the commercial yarns available, property by property. The stress-strain curves were added because they show properties that are virtually impossible to tabulate in any other form. For example, they indicate the point at which permanent and serious distortion occurs in the various rayons and Vinyon, the greatly different response of Fortisan to loading, low-load behavior of nylon, the absence of a relatively serious strain area in Fiberglas, and — most important of all — the effect of various loads from zero to ultimate rupture. Curves given are for yarn conditioned at 65% r.h. and 70° F.

Because of the importance of drape and durability, relative stiffness and toughness figures are given. They were determined as described by Dr. Harold DeWitt Smith in his Marburg lecture.

It may be needless to say that although the properties listed were checked carefully with technicians, yarn producers, users, and independent sources, the figures are averages for *commercial* yarns. They do not describe strictly accurately any one specific yarn, but undoubtedly the properties of each yarn fall within the ranges given. Yarns vary not only from producer to producer, but also from one yarn size to another and within one yarn size for different filament counts or lusters.

Development and experimental yarns are in an altogether different category and no attempt has been made to list their properties on the other side of this sheet. For one thing, the specific properties of such yarns are by no means definite, although some of their general characteristics are indicated in the summary at the left below entitled *Virtually Unlimited Variety of Synthetic Fibers.* — C. W. BENDIGO.

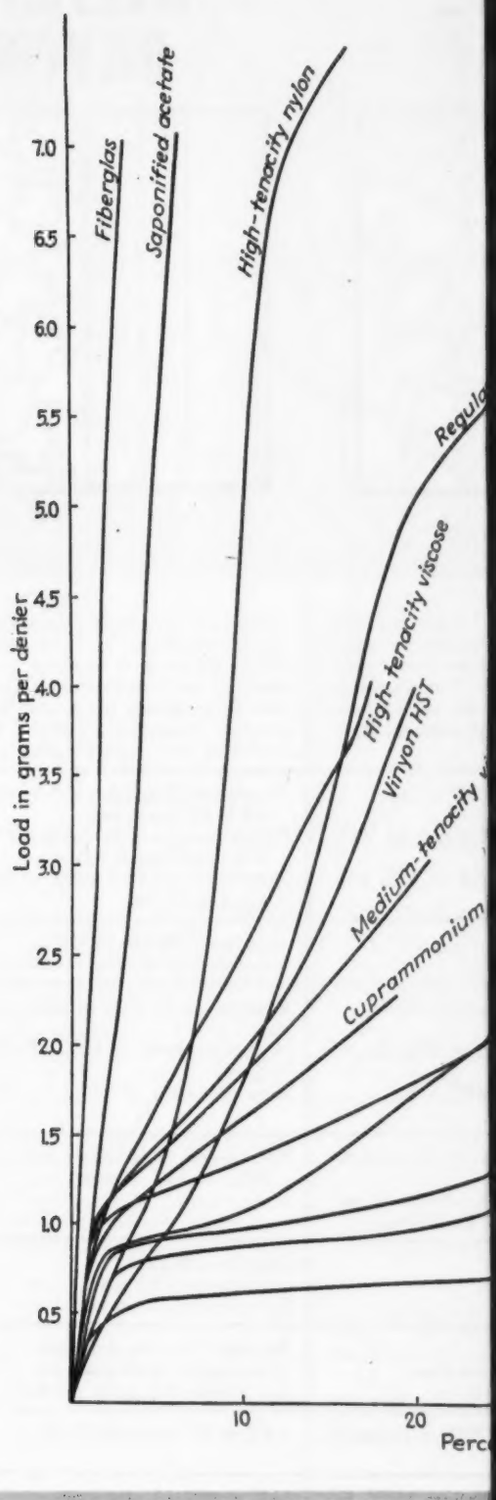
21st ANNUAL SYNTHETICS SURVEY

THIS FOLDED CHART compares the properties of the commercial synthetic fibers (on the other side) and lists all commercial synthetic yarns available, pertinent statistics, new fibers, and comparative stress-strain curves — all on one sheet. Additional copies, at 25c each, can be obtained from TEXTILE WORLD, 330 West 42nd Street, New York 18, N. Y.

Synthetics Turn Toward Peace with NEW OUTPUT RECORD

Typical Stres

This charting of typical stress-strain curves of co mercial synthetic fibers is for comparing relati fiber properties and for identifying an unknown yo if a stress-strain curve can be made of it. The e points do not necessarily give a strictly accurate co



4,138,000 lb. to 3,351,000 lb. The figures here tabulated reflect the war-molded situation which rayon manufacturers have experienced for four years and which they are now in process of leaving behind them.

diately ahead
cellulose deriva
age of acetate
undoubtedly be
succeeding yea
Tire-cord ut

ERS—
ntialities

elected —
d — New
parately.

nd toughness figures are given.
were determined as described
. Harold DeWitt Smith in his
rg lecture.

nay be needless to say that al-
n the properties listed were
d carefully with technicians,
producers, users, and inde-
nt sources, the figures are
es for commercial yarns. They
t describe strictly accurately
e specific yarn, but undoubt-
ne properties of each yarn fall
the ranges given. Yarns vary
ly from producer to producer,
o from one yarn size to an-
nd within one yarn size for
nt filament counts or lusters.

elopment and experimental
re in an altogether different
y and no attempt has been
o list their properties on the
ide of this sheet. For one
he specific properties of such
re by no means definite,
h some of their general char-
ics are indicated in the sum-
t the left below entitled *Vir-
Unlimited Variety of Syn-
Fibers.* — C. W. Bendigo.

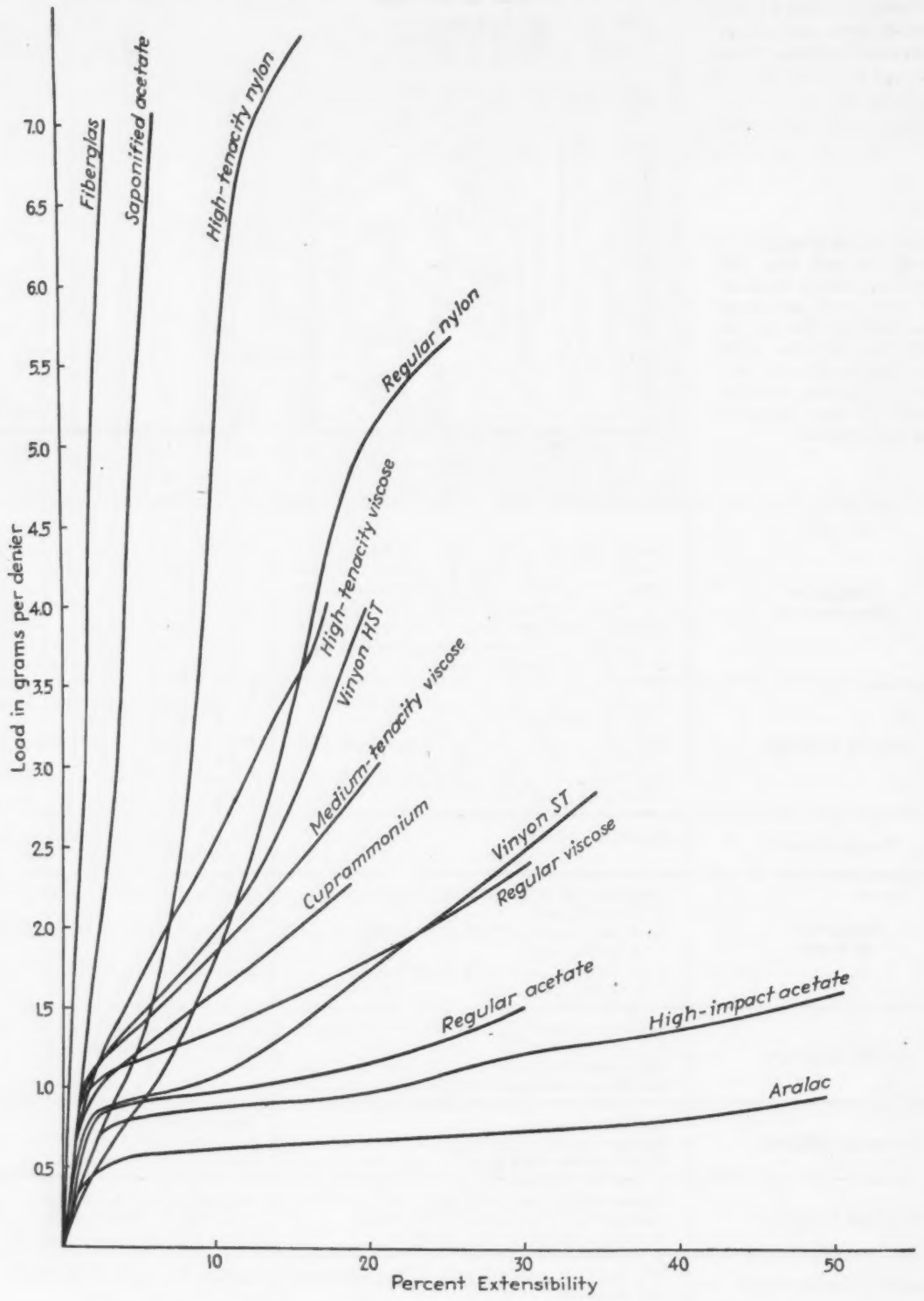
SURVEY

strain curves — all on
pies, at 25c each, can
LE WORLD, 330 West
8, N. Y.

PAGES 117 — 132

Typical Stress-Strain Curves

This charting of typical stress-strain curves of commercial synthetic fibers is for comparing relative fiber properties and for identifying an unknown yarn if a stress-strain curve can be made of it. The end points do not necessarily give a strictly accurate comparison between the fibers; in all cases the maximum figures given in the table on the opposite side of this sheet were selected for end points. For stress-strain curves of individual yarns and minimum end points, also see the other side of this sheet.



RECORD

4,138,000 lb. to 3,351,000 lb. The figures here tabulated reflect the war-molded situation which rayon manufacturers have experienced for four years and which they are now in process of leaving behind them. The amount of so-called "free" yarn

diately ahead than in the other cellulose derivatives. The percentage of acetate to total rayon will undoubtedly be greater in 1946 and succeeding years than in the past.

Tire-cord utilization of rayon is believed to be a

may meet a temporary lull at home during the period of readjustment.

Though it is far ahead to look, it is probable that greater production will be recorded in 1946 than in the year now swinging toward

Easthampton Rubber Thread Co.	Cut sizes (fractions of an inch): 24, 30, 36, 42, 50, 58, 70, 85, 112, 120, 140. Round sizes (diameter in fractions of an inch): 22, 26, 30, 37, 44, 50, 65, 75, 100, 120.
Firestone Tire & Rubber Co.	Cut sizes (fractions of an inch): 24, 30, 36, 42, 50, 58, 70, 85. Round sizes (diameter in fractions of an inch): 65, 75, 100
B. F. Goodrich Co.	Cut sizes (fractions of an inch): 24, 30, 36, 42, 50, 58, 70, 85, 112.
Para Thread Co., Inc.	Cut sizes (fractions of an inch): 24, 30, 36, 42, 50, 58, 70, 85, 112, 120, 140.
United States Rubber Co.	Cut sizes (fractions of an inch): 24, 30, 36, 42, 50, 58, 70, 85, 112, 120, 140. Round sizes (diameter in fractions of an inch): 22, 26, 30, 37, 44, 50, 65, 75, 100, 120.
PLEXON	
Freydberg Bros.-Strauss, Inc.	Variety of base yarns and 17 coating formulas in approximately 120 colors. Standard sizes (diameter in inches) 0.005, 0.01, 0.02, 0.03, 0.045, 0.065.
TENSYLON	
The Tensylon Corp.	Spun plastic films (monofilaments) ranging in diameters from 0.005 in. to 0.04 in. by 0.005 gradations.

[mo] Medium-tenacity only
[ho] High-tenacity only
[e] High-impact
[m] Medium-tenacity and regular
[b] High-tenacity and
[s] Saponified

Virtually Unlimited Variety of NEW SYNTHETIC FIBERS

HIGHLIGHTS: *Viscose-rayon variations seem unlimited — Many new protein and other non-cellulosic types produced experimentally — Some new fibers in pilot-plant production — Different physical forms of present commercial yarns made.*

DIFFERENT SYNTHETIC textile fibers can be produced almost without number – yet nothing in textiles creates interest comparable to the announcement of a new fiber, despite the fact that virtually all fail to reach the maturity of volume commercial production. By now, it should be evident that textile fibers can be produced from almost any substance – vegetable, animal, or mineral – and that significant improvements can be made on any existing fiber.

RAYON VARIATIONS. The strong viscose and acetate rayons now in commercial production represent only a small fraction of variations possible through changes in spinning solutions, after-treatments, and coatings. Interest in a viscose rayon that will dye like wool resulted in Courtaulds' Rayolanda (a surface-treated fiber with no commercial counterpart being produced in the United States); but, experimentally, wool-dyeing viscose rayon has been made by chemically adding a nitrogen content to the viscose yarn. It is claimed that with this method, no loss in strength occurs as when the same dye affinity is obtained by adding a protein to the cellulose spinning solution, as has been done by Theodoor Koch and others.

Extremely soft viscose rayons have been made in the I. G. Farben laboratory by adding oleyl alcohol to the xanthate, and at least three persons have spun viscose filaments that had an abrasive content (carborundum, glass, etc.) to "improve" their spinning qualities as staple. Perhaps the ultimate in additions is radium sulphate to produce a radio-active yarn!

Other combinations have been achieved by mixing two or more materials during spinning, such as by extruding cellulose from a hollow needle surrounded by a larger needle feeding a dissolved polyamide (nylon-like) simultaneously to produce a "superior" yarn, and by coating acetate rayon with rubber (Du Pont patent) by spinning the acetate into a latex solution.

Dozens of other fibers have been produced by chemically adding to or changing cellulosic solutions to form new synthetic yarns, most of which cannot be described except by highly technical terminology.

Some that can be described more simply are the green fiber that has been spun from ammoniated copper-oxide cellulose; the permanently wavy fiber produced by spinning filaments with two layers, one of which is regenerated before stretching and the other after; and a rippled rayon thread (patented by Du Pont) which is achieved by spinning filaments of different deniers under different tensions.

Another fiber, not necessarily new but in a new form, is that patented by J. A. Truitt and assigned to the American Viscose Corp. It is a tapered staple that can, in addition, be crimped.

PROTEIN FIBERS. Aralac (from milk casein) is the only protein synthetic fiber commercially produced in the United States, although many other protein fibers have been made in laboratories or small pilot units; for example, Drackett's unnamed soybean protein for which a new plant is expected to be opened the latter part of this year, and the expected pilot plant production of fiber from peanut protein by the Southern Regional Laboratory of the U.S. Department of Agriculture.

It is known that Corn Products Refining Co. has been doing preliminary experimental work on zein (corn) protein as has the U.S.D.A.; that the British Imperial Chemical Industries, Ltd., expects to produce

	Contro
	Paralactic
	Lyntron (Extruded, round)
	Plexon
	Tensylon
gh-tenacity and regular ponified	

patent, as there is only one listing of 2,200 den.)

Relatively few strong viscose-rayon yarns are listed here, but it is entirely possible that the "strong" yarns of today will become the "regular" yarns of tomorrow, just as today the production of staple fiber is relatively small compared to what it will be in the near future.

The relatively little acetate-rayon staple fiber listed and the relatively fewer listings of continuous-filament acetate might be misleading, particularly the latter. The proportion of acetate rayon to viscose rayon undoubtedly will increase, as there is no indication of expansion in viscose-rayon plants comparable to the expansion plans of the five acetate-rayon producers.

Less predictable are the various monofilaments listed. For specialized uses some undoubtedly will continue, just as some undoubtedly will be developed in finer and finer sizes, ultimately reaching multifilament form. The range of synthetic-rubber monofilaments given was set during the war; what their future will be is not certain.

This table, in addition to being the most complete listing published to date, also serves to mark a turning point in the production of synthetic fibers following, as it does, a period of both great development and restricted production. Significant changes as they occur will be reported in TEXTILE WORLD.

shortly a peanut-protein fiber called "Ardil"; that the Western Regional Laboratory of the U.S.D.A. has developed relatively strong protein fibers from keratin (such as chicken-feather quills) and albumen (technical egg whites); and that many persons have produced fibers from protein derived from hides, hoofs, tendons, and other animal matter (including fish and whale blubber).

SOLUBLE FIBERS. Most prominent of the easily dissolved fibers experimentally produced are those made from polyvinyl alcohol by the British and Japanese as well as Americans. Some have a strength of 2.5 g.p.d. and an elongation of 25%, which compares closely with viscose rayon. In England, principally at Leeds University, several different alginate fibers have been produced some of which are easily dissolvable. Others are not, such as those used experimentally in blends with wool. Water-soluble gelatin fibers have been made, and now J. J. Highberger and H. J. Kersten claim to have produced an insoluble type.

OTHER NON-CELLULOSIC. There have been so many non-cellulosic fibers produced experimentally that a complete listing is virtually impossible. Reports have circulated of a possibly important one, fiber "A", by Du Pont; but the company declines to comment. Carbide & Carbon have stated that a textile fiber could be produced from their polyethylene plastic, and Du Pont holds a patent on "polymers and interpolymers of ethylene" which have been spun into filaments with an original strength of around 3 g.p.d. and final strength of over 2 after shrinking.

Among other polymers that have been used for spinning fibers experimentally are sebacic anhydride and thiosemicarbazide ground together, melted, and spun to form a brown thread with a softening point of 160° F.; adipic anhydride and hydrazine hydrate mixed together, melted, and spun; tetramethylenediurea; and polyacrylonitrile (filaments of about 1 den. with strength of 2 g.p.d.).

In this same group of non-cellulosic fibers can be included experimental production from high-molecular paraffins, from urea formaldehyde, and from polystyrene (1.5 g.p.d. and 2-den. filaments).

It is known that, experimentally, fine multifilaments have been produced from the vinylidenes, such as Firestone's Velon, spun in approximately 100 den. with 8 filaments. It is also known that Carbide & Carbon and American Viscose have been endeavoring to raise Vinyon's critical temperature point and have been somewhat successful in their experiments. American Viscose holds a patent which claims that if the product is chlorinated until it has a total chlorine content of 58 to 64% the yarn will stand heat of above 220° F. before shrinking.

A technique has been described by I. G. Farben for making staple from plastic sheets by drawing them, cutting them into strips, and then shredding by friction. Resulting fiber can be spun into lustrous threads of high strength, it is claimed.

Of course, there are always the experimental mixed materials to make new or modified fibers. George Groves states in a patent assigned to Canadian Industries, Ltd., that protein materials can be combined with linear polyamides to get some of the strength of the polyamides (nylon-like) and still retain other properties of the proteins. In addition, there have been filaments produced from mixtures of polyamides and phenol-formaldehyde resins, polyamides and viscose, polyamides and gelatin, polyamides and zein.

Still unannounced are the results of attempts to make textile fibers from turpentine derivatives and from finely-drawn stainless steel, although initial fibers with textile possibilities have been made. Other metallic fibers produced more or less experimentally are those of aluminum, in which Reynolds Metals is interested. Laminations of aluminum and plastics, cut to form textile threads, have been tried out for their decorative possibilities.

Probably the ultimate to date in fineness is a continuous-filament Fiberglas with filaments of 0.0001 in. diameter, restricted to pilot-plant production. In this same field, a German (G. von Pazsizky) claims a curly fiber can be obtained by spinning filaments from two glasses of different coefficients of expansion.

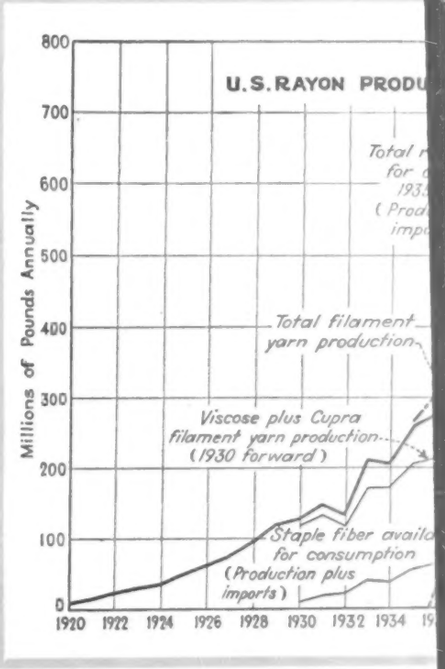
All the developments listed are relatively recent and each month finds still more added. The potential of synthetic fibers is just being realized; their wide-spread use has just begun. What new forms will become important commercially will depend on the desirability of their properties in the light of their cost of production.—C. W. BENDIGO.

Synthetics Turn with NE

HIGHLIGHTS: *Rayon production for Gain is concentrated in tire-cord type, whi rayon about 50/50 programmed and fr adjustment to peace — Export demand pl producers at full pace.*

A HIGHLY-SPECIALIZED INCREASE in production has been taking place in the primary rayon industry. Examination of the figures for the first half of 1945 discloses little change in output rates of all general classes of yarn and fiber excepting high-tenacity viscose filament yarn. This latter item reflects strongly the WPB emergency program for tire-cord production, the goal of which, at 290,000,000 lb., may not be reached due to the end of the war. Actual tire-cord viscose yarn production in the first half of 1945 was on an annual rate of 191,000,000 lb., compared with 115,000,000 for 1944, and an estimated total for 1945 of 200,000,000.

This tire-cord increase for 1945 over 1944, at about 70%, will bring the total rayon production for 1945 to a new high record of nearly 800,000,000 lb., which will be about 10% over the 1944 figure of 723,-900,



parent, as there is only one listing of 2,200 den.)

Relatively few strong viscose-rayon yarns are listed here, but it is entirely possible that the "strong" yarns of today will become the "regular" yarns of tomorrow, just as today the production of staple fiber is relatively small compared to what it will be in the near future.

The relatively little acetate-rayon staple fiber listed and the relatively fewer listings of continuous-filament acetate might be misleading, particularly the latter. The proportion of acetate rayon to viscose rayon undoubtedly will increase, as there is no indication of expansion in viscose-rayon plants comparable to the expansion plans of the five acetate-rayon producers.

Less predictable are the various monofilaments listed. For specialized uses some undoubtedly will continue, just as some undoubtedly will be developed in finer and finer sizes, ultimately reaching multifilament form. The range of synthetic-rubber monofilaments given was set during the war; what their future will be is not certain.

This table, in addition to being the most complete listing published to date, also serves to mark a turning point in the production of synthetic fibers following, as it does, a period of both great development and restricted production. Significant changes as they occur will be reported in TEXTILE WORLD.

, round)

...er called Regional ...D.A. has ...protein ...chicken- ...n (tech- ...at many ...ers from ...s, hoofs, ...l matter ...lubber).

...t promi- ...ed fibers ...re those ...l by the ...well as ...strength ...ation of ...ely with ...d, prin- ..., several ...ve been ...re easily ... such as ...n blends ... gelatin ...nd now ... Kersten ... insolu-

...LOSIC. ...ny non- ... experi- ...isting is ...ts have ...portant ...nt; but ...mment. ...ted that ...roduced ...tic, and ...n "poly- ...hylene" ...nto fila- ...ngth of

around 3 g.p.d. and final strength of over 2 after shrinking.

Among other polymers that have been used for spinning fibers experimentally are sebacic anhydride and thiosemicarbazide ground together, melted, and spun to form a brown thread with a softening point of 160° F.; adipic anhydride and hydrazine hydrate mixed together, melted, and spun; tetramethylenediurea; and polyacrylonitrile (filaments of about 1 den. with strength of 2 g.p.d.).

In this same group of noncellulosic fibers can be included experimental production from high-molecular paraffins, from urea formaldehyde, and from polystyrene (1.5 g.p.d. and 2-den. filaments).

It is known that, experimentally, fine multifilaments have been produced from the vinylidenes, such as Firestone's Velon, spun in approximately 100 den. with 8 filaments. It is also known that Carbide & Carbon and American Viscose have been endeavoring to raise Vinyon's critical temperature point and have been somewhat successful in their experiments. American Viscose holds a patent which claims that if the product is chlorinated until it has a total chlorine content of 58 to 64% the yarn will stand heat of above 220° F. before shrinking.

A technique has been described by I. G. Farben for making staple from plastic sheets by drawing them, cutting them into strips, and then shredding by friction. Resulting fiber can be spun into lustrous threads of high strength, it is claimed.

Of course, there are always the experimental mixed materials to make new or modified fibers. George Groves states in a patent assigned to Canadian Industries, Ltd., that protein materials can be combined with linear polyamides to get some of the strength of the polyamides (nylon-like) and still retain other properties of the proteins. In addition, there have been filaments produced from mixtures of polyamides and phenol-formaldehyde resins, polyamides and viscose, polyamides and gelatin, polyamides and zein.

Still unannounced are the results of attempts to make textile fibers from turpentine derivatives and from finely-drawn stainless steel, although initial fibers with textile possibilities have been made. Other metallic fibers produced more or less experimentally are those of aluminum, in which Reynolds Metals is interested. Laminations of aluminum and plastics, cut to form textile threads, have been tried out for their decorative possibilities.

Probably the ultimate to date in fineness is a continuous-filament Fiberglas with filaments of 0.0001 in. diameter, restricted to pilot-plant production. In this same field, a German (G. von Pazsizky) claims a curly fiber can be obtained by spinning filaments from two glasses of different coefficients of expansion.

All the developments listed are relatively recent and each month finds still more added. The potential of synthetic fibers is just being realized; their wide-spread use has just begun. What new forms will become important commercially will depend on the desirability of their properties in the light of their cost of production.—C. W. BENDIGO.

Synthetics Turn Toward P
with NEW OUTP

HIGHLIGHTS: *Rayon production for 1945 will top 1944 by 10% Gain is concentrated in tire-cord type, which is 70% up — War ends rayon about 50/50 programmed and free — Coming year will see adjustment to peace — Export demand plus domestic will probably producers at full pace.*

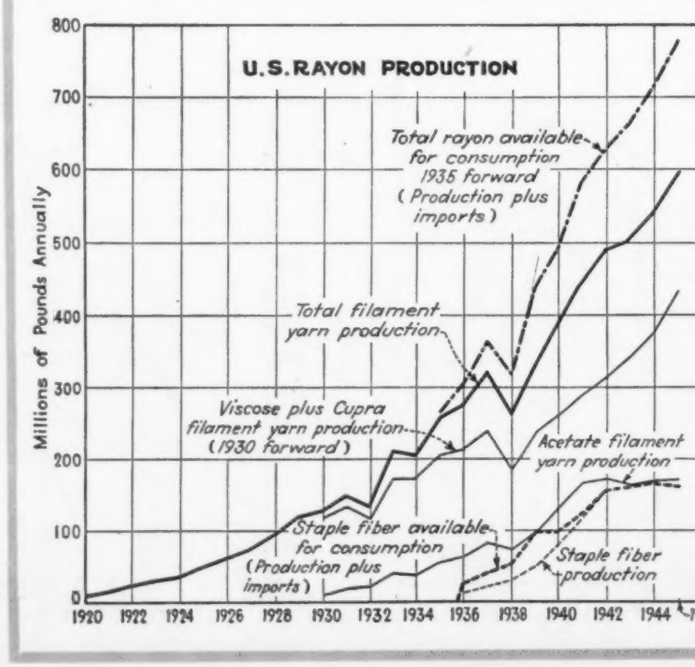
A HIGHLY-SPECIALIZED INCREASE in production has been taking place in the primary rayon industry. Examination of the figures for the first half of 1945 discloses little change in output rates of all general classes of yarn and fiber excepting high-tenacity viscose filament yarn. This latter item reflects strongly the WPB emergency program for tire-cord production, the goal of which, at 290,000,000 lb., may not be reached due to the end of the war. Actual tire-cord viscose yarn production in the first half of 1945 was on an annual rate of 191,000,000 lb., compared with 115,000,000 for 1944, and an estimated total for 1945 of 200,000,000.

This tire-cord increase for 1945 over 1944, at about 70%, will bring the total rayon production for 1945 to a new high record of nearly 800,000,000 lb., which will be about 10% over the 1944 figure of 723,900,000 lb. The major division rayon production (outside of cord) hold their rates close to with last year. Doubling the fi for the first six months of 194 make them compare with th months totals of 1944 gives following comparisons:

Staple fiber—Viscose, 1944, 400,000 lb.; 1945, 130,800,00 Acetate, 1944, 40,300,000 lb.; 37,400,000 lb. All staple, 168,700,000 lb.; 1945, 168,200 lb.

Filament—Viscose (for all poses), 1944, 383,500,000 1945, 448,400,000. Viscose tire-cord yarn), 1944, 268,000 lb.; 1945, 257,400,000 lb. Ace 1944, 171,700,000 lb.; 1945, 000,000 lb. Total filament 1944, 555,200,000 lb.; 1945, 000,000 lb.

In all the foregoing figures, cuprammonium product is incl



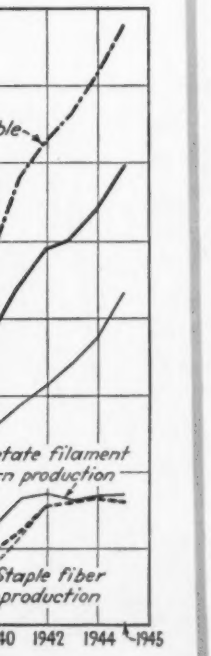
ard Peace
OUTPUT RECORD

1944 by 10% —
— War ends with
year will see re-
vill probably keep

major divisions of
(outside of tire-
ates close to a par
ubling the figures
nonths of 1945 to
pare with the 12
1944 gives the
isons:
iscose, 1944, 128,-
, 130,800,000 lb.
300,000 lb.; 1945,
All staple, 1944,
945, 168,200,000

ose (for all pur-
383,500,000 lb.;
00. Viscose (less
944, 268,000,000
,000 lb. Acetate,
0 lb.; 1945, 173,-
l filament yarn,
0 lb.; 1945, 621,-

going figures, the
roduct is included



with the viscose to avoid disclosing the figures of two companies. The consumption figures quoted are derived from the reports appearing in *Rayon Organon*.

Available production figures on other synthetics are less detailed, making close comparisons with past years impossible. Even current figures are estimates in most cases. Nearly all of these fibers have come into commercial importance in the last five years. Nylon undoubtedly heads the non-cellulosic synthetics in volume with a prewar production of about 16,000,000 lb., which has been run up to 24,000,000 lb. in the war years. Fiberglas has risen during the war years likewise because of its military uses and is rated now as something in excess of 10,000,000 lb. yearly. Production of the Saran, Velon, Sapphire group, based on vinylidene, must run upwards of 5,000,000 lb. yearly, but that is merely a trade estimate. Vinyon is said to be running under 1,000,000 lb., and Aralac much higher.

According to WPB figures issued through the Bureau of the Census, there was a sharp increase in the production of fabrics made from nylon, glass, casein, and other fibers between early 1944 and a year later. The figure for the first three months of 1944 was only 10,881,000 linear yards, while the similar period a year later (first quarter of 1945) was 22,970,000 yards. The figure may be deceptive, for the glass cloth figures were not available to include in the earlier period. Actually, the figure for the last quarter of 1944 marks the high in this item, newly reported so far as census figures go, with a production of 30,994,000 yd.

Reported broad woven goods for the first quarter of 1945 disclose only minor changes. The principal declines were in such fabrics as bright viscose taffetas, twills and serges, flat crepes, and combination crepes. The principal increases were in satins, French crepes, linen type and flakes, Fujis, and upholsteries and draperies. Tire-cord fabrics and other tire fabrics jumped from 15,-830,000 lb. in first quarter of 1944 to 37,777,000 lb. in the first quarter of 1945. In that same interval, production of fuel-cell fabrics, which involve use of rayon, declined from 4,138,000 lb. to 3,351,000

figures here tabulated re
war-molded situation whic
manufacturers have experie
four years and which they
in process of leaving behi
The amount of so-called "f
has been about 50% of th
the remaining 50% going i
rated or programmed-uses.
current return of nylon, a
of the hosiery field will be
its call for rayon. The utility
tenacity, fine rayon as a ho
terial has never been tried
sufficiently large scale, but
sors foresee a real place for
nylon in women's hosiery. D
newly developed fiber "A"
cose's Vinyon are among
known factors which will
share in shaping the hosier
for the near future.

Based on demand trends
company plans for expansio
will be a larger relative gr
acetate rayon in the perio

BROAD WOVEN GOOD
100% filament-rayon f
Total
Tie fabrics (all types
or more rayon)
Bright viscose taffetas
Pigment viscose taffet
Acetate taffetas
Cross-dyed taffetas
Twills and serges
Satins
Flat crepes
French crepes
Canton crepes
Sheers (incl. georgett
Marquisettes
Ninons and voiles
Combination crepes
All other, incl. parachu
fabrics
100% spun-rayon fabric
Poplins and challis
Twills, serges and bedf
Linen types and flake
Plied-yarn fabrics
All other
Filament and spun-rayon

1000s of
Rayon broad woven goo
Filament
Spun
Tire cord and fabric (fi
Narrow woven goods
Woolen and worsted in
staple and rayon wast
* Last quarter 194

e

T RECORD

th the viscose to avoid disclosing
e figures of two companies. The
nsumption figures quoted are de-
ed from the reports appearing in
yon Organon.

Available production figures on
ner synthetics are less detailed,
king close comparisons with past
rs impossible. Even current fig-
s are estimates in most cases.
arly all of these fibers have come
o commercial importance in the
t five years. Nylon undoubtedly
ds the non-cellulosic synthetics
volume with a prewar produc-
n of about 16,000,000 lb., which
been run up to 24,000,000 lb.
the war years. Fiberglas has risen
ring the war years likewise because
ts military uses and is rated now
omething in excess of 10,000,000
yearly. Production of the Saran,
on, Sapphire group, based on
vlidene, must run upwards of
00,000 lb. yearly, but that is
rely a trade estimate. Vinyon is
l to be running under 1,000,000
and Aralac much higher.

According to WPB figures issued
ough the Bureau of the Census,
re was a sharp increase in the
duction of fabrics made from
on, glass, casein, and other fibers
ween early 1944 and a year later.
e figure for the first three months
1944 was only 10,881,000 linear
ds, while the similar period a year
r (first quarter of 1945) was
970,000 yards. The figure may
deceptive, for the glass cloth
ures were not available to include
the earlier period. Actually, the
re for the last quarter of 1944
ks the high in this item, newly
orted so far as census figures go,
h a production of 30,994,000 yd.
Reported broad woven goods for
first quarter of 1945 disclose
y minor changes. The principal
lines were in such fabrics as
ght viscose taffetas, twills and
es, flat crepes, and combination
es. The principal increases were
atins, French crepes, linen type
flakes, Fujis, and upholsteries
draperies. Tire-cord fabrics and
er tire fabrics jumped from 15,-
0,000 lb. in first quarter of 1944
37,777,000 lb. in the first quar-
of 1945. In that same interval,
duction of fuel-cell fabrics, which
olve use of rayon, declined from
4,138,000 lb. to 3,351,000 lb. The figures here tabulated reflect the war-molded situation which rayon manufacturers have experienced for four years and which they are now in process of leaving behind them. The amount of so-called "free" yarn has been about 50% of the output, the remaining 50% going into high-rated or programmed uses. With the current return of nylon, a portion of the hosiery field will be reducing its call for rayon. The utility of high-tenacity, fine rayon as a hosiery material has never been tried out on a sufficiently large scale, but its sponsors foresee a real place for it beside nylon in women's hosiery. Du Pont's newly developed fiber "A" and Viscose's Vinyon are among the unknown factors which will take a share in shaping the hosiery market for the near future.

Based on demand trends and on company plans for expansion, there will be a larger relative growth in acetate rayon in the period immediately ahead than in the other cellulose derivatives. The percentage of acetate to total rayon will undoubtedly be greater in 1946 and succeeding years than in the past.

Tire-cord utilization of rayon is believed to be a permanent development, although to forecast the poundage here is fruitless until the consumer reaction to quality and price becomes more evident through the experience that lies ahead in a free market.

Returning peace is likely to lend new vigor to high-style merchandise, and rayon, alone or in various fiber combinations, may be counted upon for the novel effects which are the life of that branch of the market. On the opposite end of the scale, mechanical uses for synthetics seem to be opening new and broader fields.

Exports will take out of the domestic field a considerable poundage – certainly enough to carry over any division of the industry which may meet a temporary lull at home during the period of readjustment.

Though it is far ahead to look, it is probable that greater production will be recorded in 1946 than in the year now swinging toward its autumn. The war has over-stimulated parts of the industry, while restraining natural gains that might have been made in other quarters.

Staple fiber has been a war casualty and its production stabilized or reduced during the recent past. Meanwhile, demand has been rising and much of the earliest expansion in the coming period of free operation will be in the staple division.

If relaxation in the over-stimulated branches and growth in those lately restrained brings the market momentarily to a kind of balance, there is still the revival of world trade which seems the added increment which will push production of synthetics to new maximums through the readjustment period now beginning.—W. B. DALL.

PRODUCTION OF ITEMS MADE FROM RAYON

(In first quarter of years 1944 and 1945)

BROAD WOVEN GOODS — 1000s of yds.	1944 (1st quarter)	1945 (1st quarter)
100% filament-rayon fabrics		
Total	294,541	275,971
Tie fabrics (all types, 51% or more rayon)	4,073	4,708
Bright viscose taffetas	12,762	9,640
Pigment viscose taffetas	22,501	21,668
Acetate taffetas	23,327	21,454
Cross-dyed taffetas	5,370	5,060
Twills and serges	34,890	29,290
Satins	38,511	40,837
Flat crepes	19,801	16,346
French crepes	19,602	21,761
Canton crepes	2,346	2,872
Sheers (incl. georgette)	8,229	8,713
Marquisettes	10,640	11,139
Ninons and voiles	9,579	9,537
Combination crepes	40,657	36,398
All other, incl. parachute fabrics	46,326	41,256
100% spun-rayon fabrics	42,605	44,016
Poplins and challis	7,647	7,652
Twills, serges and bedford cords	16,075	14,752
Linen types and flakes	5,901	7,040
Plied-yarn fabrics	4,873	4,975
All other	8,109	9,595
Filament and spun-rayon fabrics	38,049	40,841

1000s of yds.	1944 (1st quarter)	1945 (1st quarter)
Fujis	11,382	13,178
Shantungs	7,391	7,641
All other	19,276	20,022
Mixtures (51% or more rayon)	37,466	40,891
Rayon and wool	6,306	6,644
Rayon and cotton	23,240	22,143
Rayon and other fibers	7,920	12,104
Velvets, plushes and other pile	1,985	2,233
Upholstery, drapery and tapestry	924	1,235
Estimate to cover mills not reporting	2,961	510
Total rayon broad woven goods	422,604	410,405
KNITTED GOODS—1000s of dozs.		
Full-fashioned hosiery for women (doz. prs.)	†8,818	†9,073
Seamless hosiery for women (doz. prs.)	†1,838	†1,306
Half-hose and slacks	†2,909	†2,281
Knit underwear and nightwear (doz. garments)	*3,171	.....
Knit fabric gloves circular and warp (doz. prs.)	*333	.....

CONSUMPTION OF RAYON

(In first quarter of years 1944 and 1945)

1000s of lbs.	1944 (1st quarter)	1945 (1st quarter)
Rayon broad woven goods	117,017	138,741
Filament	90,818	112,221
Spun	26,199	26,520
Tire cord and fabric (filament)	22,850	45,450
Narrow woven goods	3,300	2,850
Woolen and worsted industry staple and rayon waste	15,229	.....

1000s of lbs.	1944 (1st quarter)	1945 (1st quarter)
Full-fashioned hosiery (viscose and cupra)	†7,000	†6,489
All other hosiery (viscose and cupra)	†3,200	†2,781
All hosiery (acetate)	†2,100	†2,000
Underwear, outerwear and other knit	†14,031	.....

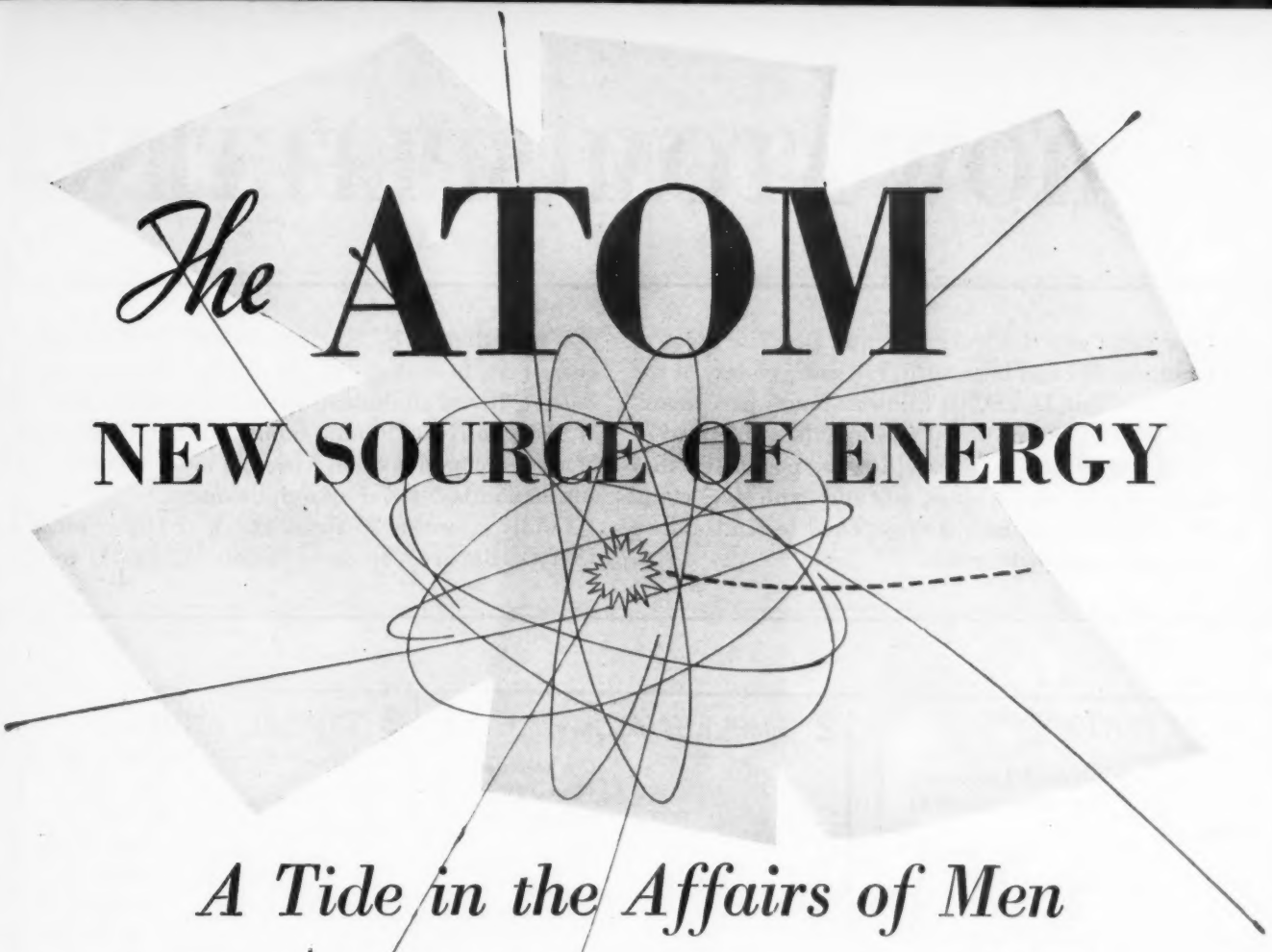
* Last quarter 1943. † Average quarterly figure based on all of previous year.

Figures from WPB, "Rayon Organon", Dept. of Commerce.

On A
the J
Its
fibre
the
even
that
It
Mari
the a
of th
tribu
kind
awes
thou
U
majo
has
imag
deatl
entif
the
brou
ority
But
that
bom
W
unra

Copyrig

The ATOM
NEW SOURCE OF ENERGY



A Tide in the Affairs of Men

On August 6, 1945, an atomic bomb exploded over the Japanese city, Hiroshima.

Its concussion blasted the city, vaporized the fibre of Japan's will to resist, and flashed across the world a light of such glaring intensity that even blind eyes could glimpse the forked road that is presented to humanity's choice and destiny.

It has been a scant fifty years since Pierre and Marie Curie embarked upon their research with the avowed intent of discovering "how the atoms of the universe are put together". Their work contributed radium to the knowledge and use of mankind, but it marked only a way station upon the awesome quest which they announced and which thousands of scientists have since pursued.

Under the compelling stimulus of war, the first major application of the release of atomic force has been in an instrument that raises by an unimaginable dimension our ability to dole out death. We can be devoutly grateful that the scientific leadership of the Allies, and particularly the industrial strength of the United States, brought to us, rather than to our enemies, priority in the development of this dread weapon. But even in its present infant phase, it is clear that ownership of the principle of the atomic bomb carries a trusteeship of terrifying gravity.

We hold in trust a power that is capable of unraveling the very fabric of our civilization. Equally, it may be susceptible of development as a mighty force for human welfare. But we have proved the destructive use, while the constructive applications are still in the realm of speculation.

Clearly the trust is of a magnitude that transcends national jurisdiction. No walls have ever been built high enough to fence in the spread of scientific knowledge, and even if we were resolved to forego the harnessing of atomic power for peace, it is hopeless to think that its application for war can be held for long as the monopoly of one, or a small group of nations.

At one giant stride our scientific and technological development has so far outdistanced our social engineering, that we have no choice but to turn our full powers of creative imagination to control the forces we have unleashed and to bend them to man's use rather than to his destruction.

Since control is not possible without understanding, I have asked several of my editorial colleagues in the McGraw-Hill organization to present on the pages which follow a non-technical but authoritative account of the known facts and implications of atomic power.

James H. McGraw, Jr.

President, McGraw-Hill Publishing Co., Inc.

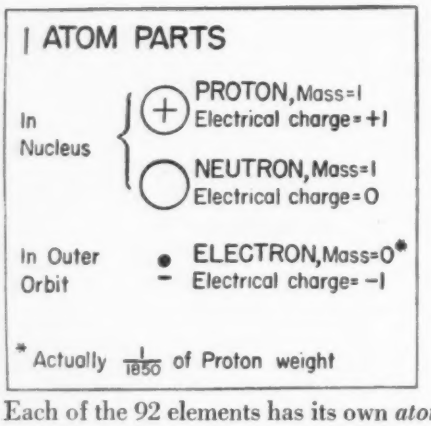
Copyright 1945 by the McGRAW-HILL PUBLISHING COMPANY 330 W. 42nd St., New York 18, N. Y.

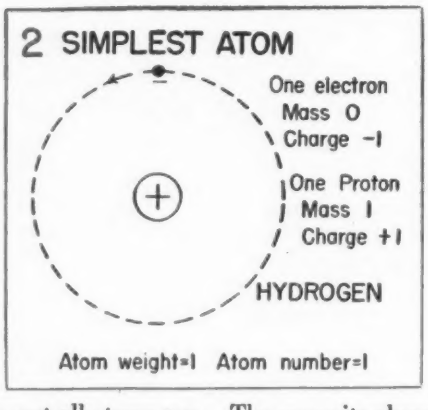
HOW ATOM SPLITTING

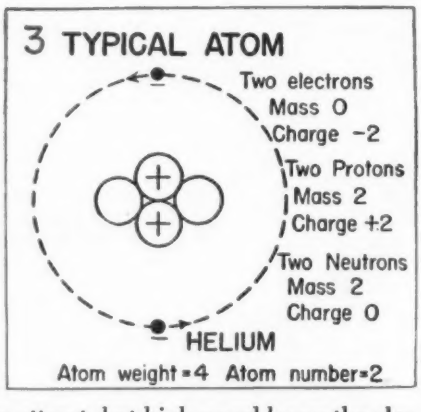
Five years ago the world learned that the atom of Uranium 235 had been split, releasing energy at the rate of about 11,400,000 kilowatt-hours per pound. The whole amount tested was less than the head of a pin, but there was no escaping the possibility that heaters, engines, turbines, jets and explosives could be powered by atomic energy. Then began the race to win the war with atoms.

With what help England could give, America outran the best atom-splitting team Germany could muster. It was all done in silence. From the summer of 1940 until the atomic bomb blasted Hiroshima, black secrecy blanketed history's most amazing scientific and industrial accomplishment.

Coldly scientific in form, the War Department's "Smyth Report," released August 12, 1945, traces

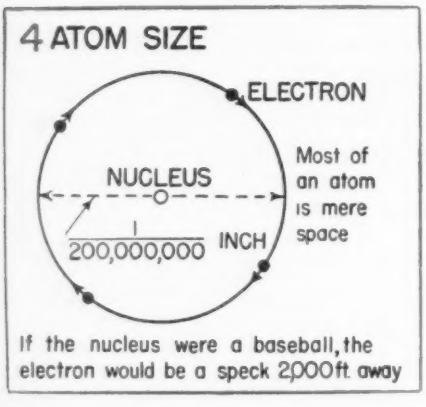


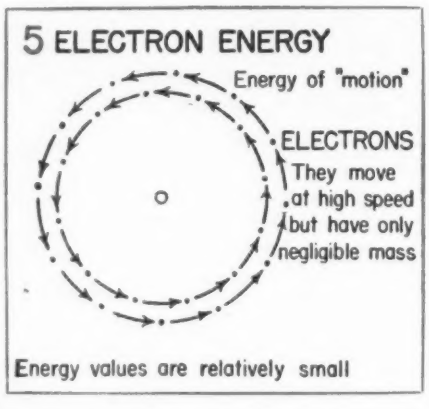


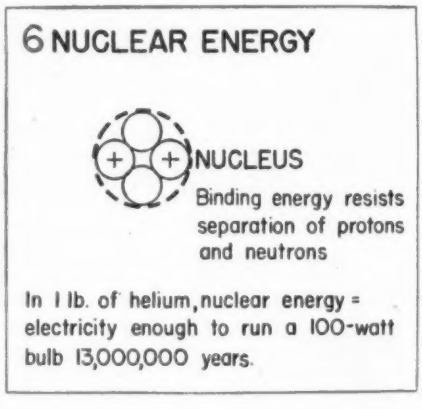


Each of the 92 elements has its own *atom*, yet all atoms are made from the same three pieces, Fig. 1: *proton* (weight 1, electric charge +1), *neutron* (weight 1, charge 0), *electron* (weight 0, charge −1).

Every atom is a tiny "solar system." Its central "sun" has one or more protons, generally neutrons too. The revolving "planets" are electrons, one for each proton in nucleus, because plus and minus must balance in the atom. The opposite charges attract, but high speed keeps the electrons out in their circular orbits, just as the centrifugal tendency of the revolving earth defies the sun's gravitational pull. All the weight of an atom is in the nucleus, so add the number of protons and neutrons to get the atom's weight. The *atomic number* is equal to the number of protons. The elements are known by their atomic numbers. Thus uranium (92 protons) is element 92.


4 ATOM SIZE
ELECTRON
NUCLEUS
Most of an atom is mere space
1/200,000,000 INCH
If the nucleus were a baseball, the electron would be a speck 2,000 ft. away


5 ELECTRON ENERGY
Energy of "motion"
ELECTRONS
They move at high speed but have only negligible mass
Energy values are relatively small


6 NUCLEAR ENERGY
NUCLEUS
Binding energy resists separation of protons and neutrons
In 1 lb. of helium, nuclear energy = electricity enough to run a 100-watt bulb 13,000,000 years.

With only their outermost orbits touching, it would take half a million atoms to span the thickness of a human hair. Yet if one could expand an atom until its outer orbits encircled 100 acres, the nucleus would be no bigger than a baseball. The atom is mostly empty space, Fig. 4, and nuclei are difficult targets; so much so that a neutron bullet fired at a mass of atoms may pass right through without a hit.

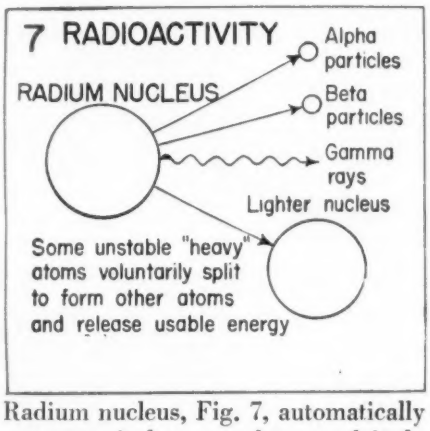
The almost weightless speeding electrons, Fig. 5, supply all the energy of chemical reactions (as when coal burns or TNT explodes). Evading all ordinary chemical action, the immensely greater energy bound up in the nucleus, Fig. 6, can be released only by direct hits on the nucleus to break the bonds that hold the protons and neutrons in a tight bundle.

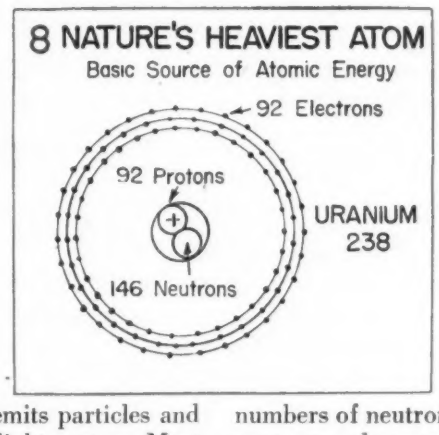
RELEASES ENERGY

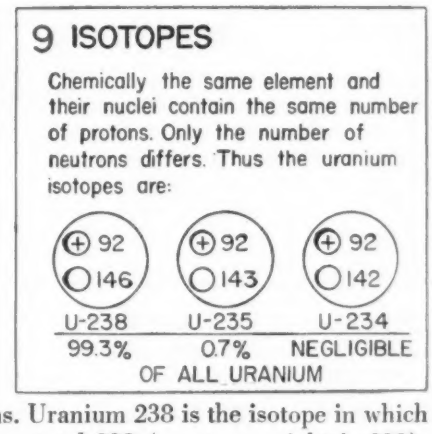
the fantastic course of atomic engineering through the five years of news blackout. It leaves no doubt that only a complete mobilization of America's technical resources could have won this victory in time.

Other writers in other places will unfold the epic story. This presentation leaves no space to reflect the glory of the accomplishment or even to record its history. The aim is more immediately practical — to give the professional and business readers of the McGraw-Hill publications a sound and honest, though non-technical, understanding of this atom-smashing business, so that they will know better what to do about it in their personal and business lives.

Now for step one: learning the shape of atoms and how atom splitting releases energy.

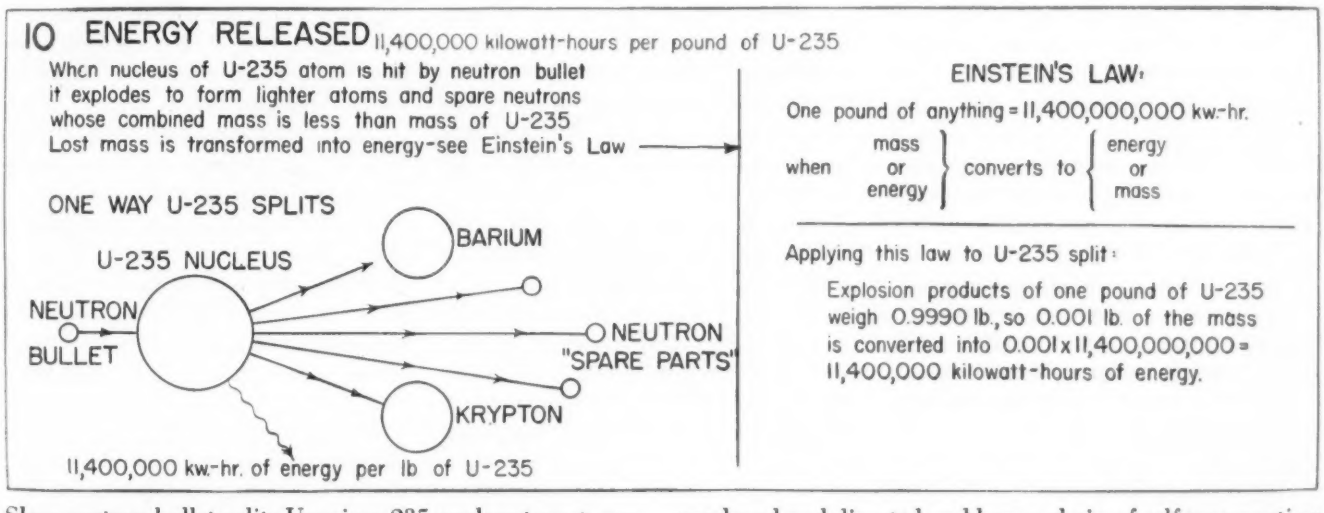






Radium nucleus, Fig. 7, automatically emits particles and energy as it decays to form nuclei of a lighter atom. Most common form of uranium, nature's heaviest atom, is Uranium 238, Fig. 8. This form is not directly useful for energy release, but is important as the raw material for a new synthetic power atom, *plutonium*.

An element may have several *isotopes* — alternate forms with the same number of protons but slightly different numbers of neutrons. Uranium 238 is the isotope in which protons and neutrons total 238 (so atom weight is 238). It is 99.3% of the total weight of pure, natural uranium. The stuff needed for direct atomic-energy release is Uranium 235, only 0.7% of the total weight and very difficult to separate from 238. To put it another way, every pound of energy-giving U-235 comes mixed with a dead load of 140 pounds of relatively inert U-238.

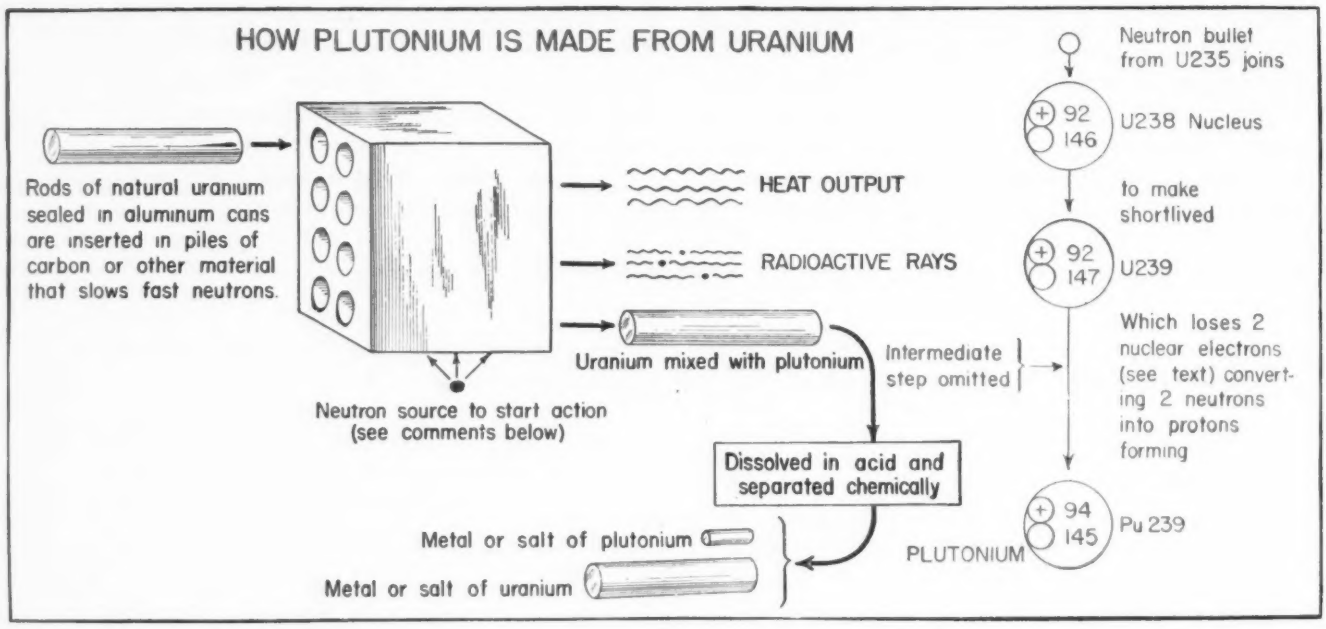

10 ENERGY RELEASED 11,400,000 kilowatt-hours per pound of U-235
When nucleus of U-235 atom is hit by neutron bullet it explodes to form lighter atoms and spare neutrons whose combined mass is less than mass of U-235 Lost mass is transformed into energy-see Einstein's Law
ONE WAY U-235 SPLITS
U-235 NUCLEUS
NEUTRON BULLET
BARIUM
NEUTRON "SPARE PARTS"
KRYPTON
11,400,000 kw.-hr. of energy per lb of U-235
EINSTEIN'S LAW:
One pound of anything = 11,400,000,000 kw.-hr.
when mass or energy converts to energy or mass
Applying this law to U-235 split:
Explosion products of one pound of U-235 weigh 0.9990 lb., so 0.001 lb. of the mass is converted into 0.001 x 11,400,000,000 = 11,400,000 kilowatt-hours of energy.

Slow neutron bullet splits Uranium 235 nuclear target, generating two lighter atoms (Fig. 10 shows one possibility) and several free neutrons ready to split other U-235 atoms. The following pages show how the original neutron may be produced and directed and how a chain of self-propagating atomic explosions may sweep through a block of U-235 like a forest fire to release heat energy equivalent to 11,400,000 kilowatt-hours per pound.

CONTINUED ON NEXT PAGE

CREATING and ISOLATING

Man-Made Plutonium—U-235 Substitute


HOW PLUTONIUM IS MADE FROM URANIUM
Rods of natural uranium sealed in aluminum cans are inserted in piles of carbon or other material that slows fast neutrons.
HEAT OUTPUT
RADIOACTIVE RAYS
Uranium mixed with plutonium
Neutron source to start action (see comments below)
Dissolved in acid and separated chemically
Metal or salt of plutonium
Metal or salt of uranium
Neutron bullet from U235 joins
92 146 U238 Nucleus
to make shortlived
92 147 U239
Intermediate step omitted
Which loses 2 nuclear electrons (see text) converting 2 neutrons into protons forming
94 145 Pu 239
PLUTONIUM

We now have two kinds of atoms suitable for energy supply, Uranium 235 and the new man-made element No. 94, plutonium. Uranium, No. 92, has the heaviest atom of any natural element.

The Manhattan Project's plant, on the Columbia River at Hanford, Washington, is the world's greatest atom-making factory. Devoted entirely to the mass production of plutonium atoms, it uses U-238 as the raw material and U-235 as the energy source, intimately mixed in the same proportions as in natural uranium metal.

The production units at Hanford are several huge uranium "piles." Each is a very large block of graphite with holes in which are placed uranium-metal cylinders, sealed in aluminum cans to protect the uranium from corrosion by the cooling water constantly pumped through the pile.

Each pile runs itself, so to speak. Not even the conventionally pictured bits of radium, beryllium and paraffin are needed as a "pilot light" to start operation. There are always enough stray neutrons, or even cosmic rays, to start a chain reaction.

But once started, the design, size and control of the unit must be such that the chain reaction will continue at an even rate — neither die down nor overshoot into an explosion.

To see this picture in atomic terms, consider the fraction of a second in which one million U-235 nuclei are split, producing two million lighter atoms (say, one million of barium and one million of krypton) and between one and three million fast-moving neutron projectiles.

Some of these escape in free flight right through the relatively vast atomic "open spaces." Some are "captured" by the many U-238 nuclei, and others are captured by the impurities. But, on the average, of the one to three million, just one million neutrons must succeed in smashing another million U-235 atoms in the next fraction of a second. Thus, with reproduction rate exactly maintained, life goes on in the atomic-energy pile.

The carbon, one of several possible "moderators," serves to slow down the neutrons without capturing many. The chance of a fast, straight-moving neutron hitting a tiny nucleus is very small, whereas the "slow ball" neutron is likely to be sucked in by the nuclear attraction if it would otherwise be a near miss.

From the practical angle, maintaining a chain reaction requires careful design and good controls. The pile must be slightly larger than actually necessary for a chain reaction (that means scores of tons of material). Controls must be sensitive and dependable. They slow the pile down to the balancing point by sliding in retarders, such as strips of cadmium.

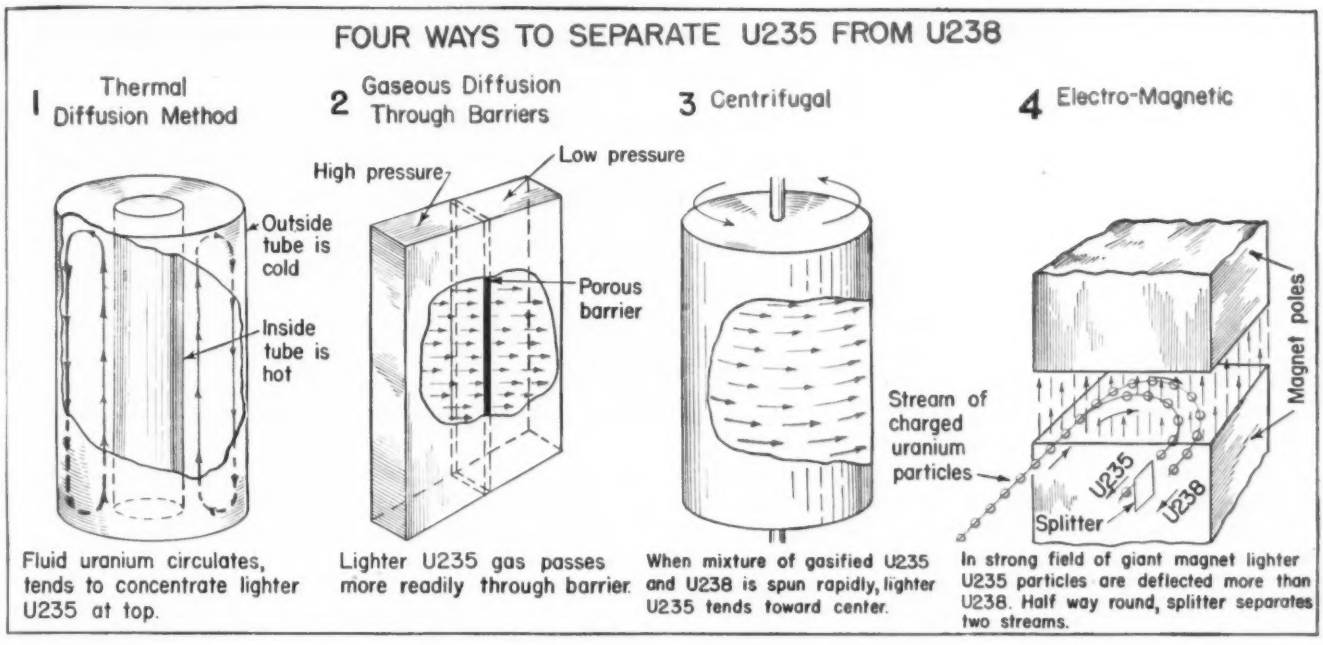
As already noted elsewhere, the energy released is about 11,400,000 kilowatt-hours for each pound of U-235 split. This energy appears first in the high speed of the pieces thrown off by the atomic split, then is converted to sensible heat as collisions slow down these projectiles. The energy is finally removed from the pile in the form of hot air, steam, hot water or other heated fluid in commercial quantity and thermal condition.

Such piles, operated with normal uranium, or with uranium enriched in U-235, would seem to be the primary means by which atomic energy will serve (if ever) as a commercial source of heat and power. Plutonium would be a byproduct, but might under certain conditions add to the energy yield of the pile without the need to separate it from the uranium.

The use of normal uranium in the Hanford pile sounds extremely attractive as a heat source, but has certain economic disabilities. Only a small part of the U-235 is used up before the pile must be shut down to remove the plutonium.

THE HIGH-POWER ATOMS

Isolating U-235 — a Gigantic Task


FOUR WAYS TO SEPARATE U235 FROM U238
1 Thermal Diffusion Method
2 Gaseous Diffusion Through Barriers
3 Centrifugal
4 Electro-Magnetic
Outside tube is cold
Inside tube is hot
High pressure
Low pressure
Porous barrier
Stream of charged uranium particles
Magnet poles
U235
U238
Splitter
Fluid uranium circulates, tends to concentrate lighter U235 at top.
Lighter U235 gas passes more readily through barrier.
When mixture of gasified U235 and U238 is spun rapidly, lighter U235 tends toward center.
In strong field of giant magnet lighter U235 particles are deflected more than U238. Half way round, splitter separates two streams.

Many of the uranium ores, including most samples of pitchblende and carnotite, will yield from 1 to 15% metallic uranium. Chemical separation of the metallic "natural" uranium is simple. Whatever the source, natural uranium contains the three isotopes in the constant proportions of 99.3% U-238 and 0.7% U-235, with traces of U-234.

Separating the U-235 from U-238, an operation essential for explosive uses of U-235, and probably important for future commercial controlled-chain piles, has been most difficult. Chemical separation was impossible because U-235 and U-238 are chemically the same.

The only possibility was a separation by physical differences, primarily a one percent difference in weight. The porous barrier and centrifugal methods pictured above required vaporizing a salt of uranium. All the methods shown have been used or tried on the Manhattan Project. All require many stages to achieve a substantial concentration of Uranium 235.

Dollarwise Thoughts on Atomic Energy

Costs mean little in war, but peacetime uses of U-235 and plutonium must pass the dollar test in competition with coal, fuel oil, natural gas, gasoline and electricity.

On the basis of energy costs only, "*all other things being equal*," the table on the last page of this section shows at what price per pound U-235 would give the same energy cost as conventional energy sources selling at the indicated prices. For such comparisons it is convenient to remember that one pound of U-235 is equal (energy-wise) to about 11,400,000 kilowatt-hours, also to 1500 tons of coal, or 200,000 gallons of gasoline.

Fuel engineers understand the limitations of such oversimplified comparisons. Others should be warned that "all other things" are never equal. With this thought in mind, reconsider the uranium piles operated at Hanford to produce plutonium. These use U-235 in the cheapest form, say about $1400 per lb., assuming purified normal uranium at $10 per lb. (140 lb. of uranium contains one pound of U-235.)

If this were the whole story, coal would have to sell for a dollar a ton to break even with U-235 as a water heater. However, the pile using normal uranium must be immense to hold its own in a chain reaction. More important, the accumulating fission products "poison" the reaction after only a small part of the U-235 has been used up. Then the uranium cylinders must be removed for plutonium recovery. Finally, it has not yet been found possible to operate the normal-uranium piles at high enough temperatures for practical power production.

If we go to the other extreme and build a small pile, using concentrated U-235, we shall run into excessive material costs, perhaps several times the $52,000 per lb. set down in the table as the equivalent of 20-cent gasoline.

Something between the two extremes is likely to prove the most economical — perhaps a pile operating on a U-235 concentration between 1 and 10%.

The engineer of the "atomic-power age" must know the price of Uranium 235 *in various concentrations* and the characteristics of piles suited to them. No such information is yet available. He must also watch the danger from radio-activity; the requirements for radiation shields; explosion hazards, etc.

CONTINUED ON NEXT PAGE

WHAT TO EXPECT F

Before discussion of possible and probable future applications of atomic energy to the arts of peace, the atomic bombs should have consideration. We may assume that these bombs contained from two to 200 lb. of either U-235 or plutonium, or both. No more precise information is available.

Details of the bomb design have been completely suppressed, but the following basic considerations are stated or implied in the Smyth Report:

The explosive in a bomb must be highly concentrated U-235 or plutonium. Since slow neutrons could not produce a satisfactory explosion, the neutron retarder or *moderator*, is minimized. This, in turn, requires a U-235 mass so large that the escape of neutrons without hitting nuclei will not be excessive. For every 1000 atoms hit, the neutrons produced must split more than 1000 new atoms, so that the reaction will proceed rapidly in an expanding chain, as sketched below.

There can be little leeway in the size of the explosive charge. For a given shape there is a certain "critical" weight of material. If this is exceeded the bomb explodes instantly. If the weight of charge is less than the critical, it cannot be made to explode.

Therefore, the critical mass must be created at the moment of explosion.

The Smyth Report suggests that this can be accomplished by breaking down the charge into two or more well-separated parts, each having less than the critical mass. At the appointed moment these could be brought together within the bomb to create a supercritical mass, which would then explode automatically.

CLAIMS LIKE THESE ARE NOT JUSTIFIED

1. Pretty soon no more coal will be mined except as a raw material for chemical manufacture.

2. In a few years a tiny bit of uranium, built in at the factory, will drive your car for life through an engine no bigger than your fist.

3. All the big central stations will soon be running on atomic power.

4. Cheap atomic energy will enormously reduce the price of power.

Peacetime Applications

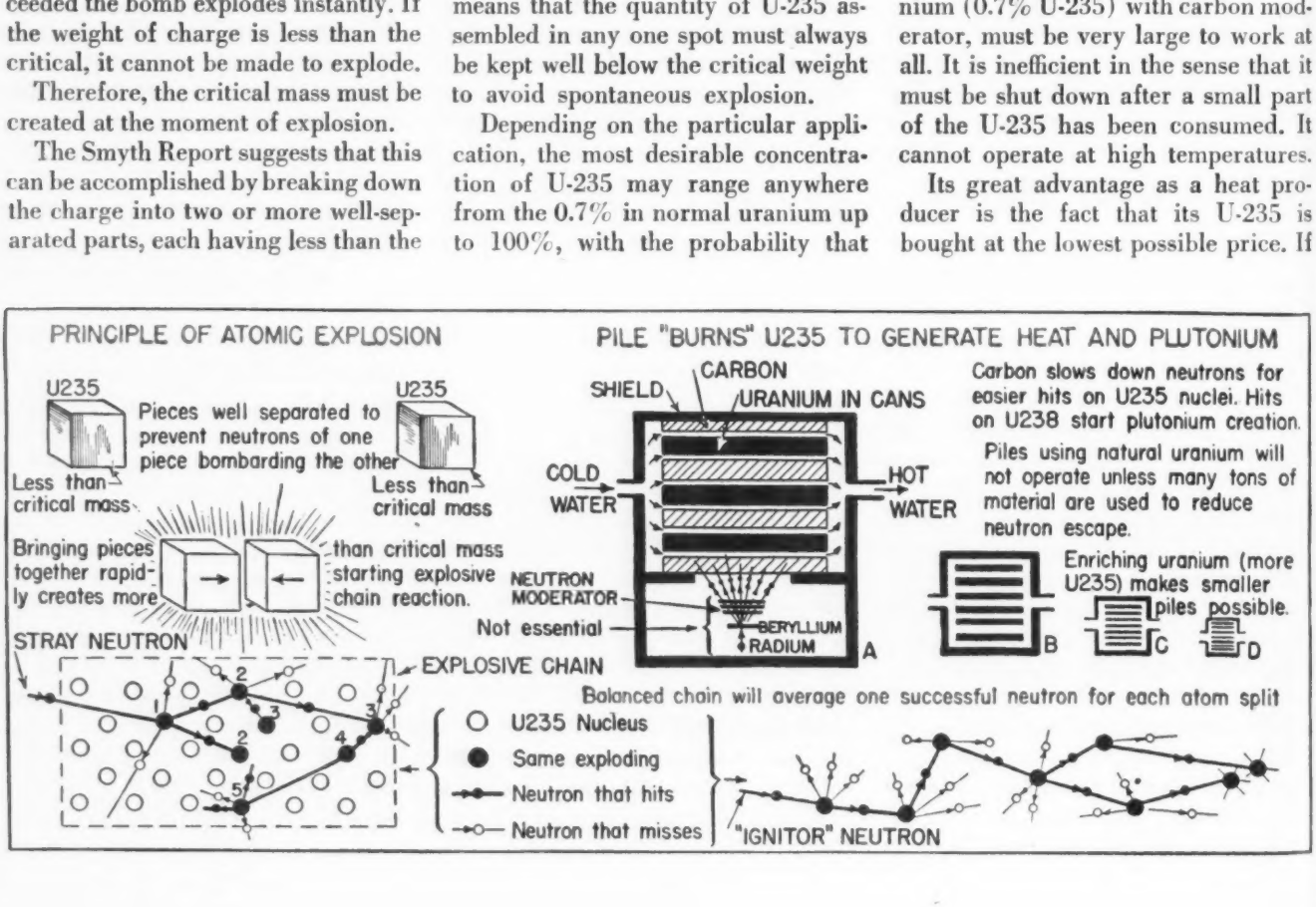
Except possibly for superblasting operations, uncontrolled explosive reactions cannot be permitted in the peacetime use of atomic energy. This means that the quantity of U-235 assembled in any one spot must always be kept well below the critical weight to avoid spontaneous explosion.

Depending on the particular application, the most desirable concentration of U-235 may range anywhere from the 0.7% in normal uranium up to 100%, with the probability that many industrial applications will find the greatest economy in concentrations between 1% and 15%.

This matter of the degree of concentration of U-235 has received little public attention, yet nothing could be of greater practical importance. To make this point clear, consider the two extremes, 0.7% of U-235 and 100% of U-235, respectively.

The Hanford pile, using normal uranium (0.7% U-235) with carbon moderator, must be very large to work at all. It is inefficient in the sense that it must be shut down after a small part of the U-235 has been consumed. It cannot operate at high temperatures.

Its great advantage as a heat producer is the fact that its U-235 is bought at the lowest possible price. If


PRINCIPLE OF ATOMIC EXPLOSION
U235
U235
Pieces well separated to prevent neutrons of one piece bombarding the other
Less than critical mass
Less than critical mass
Bringing pieces together rapidly creates more than critical mass starting explosive chain reaction.
STRAY NEUTRON
EXPLOSIVE CHAIN
PILE "BURNS" U235 TO GENERATE HEAT AND PLUTONIUM
CARBON
SHIELD
URANIUM IN CANS
COLD WATER
HOT WATER
NEUTRON MODERATOR
Not essential
BERYLLIUM
RADIUM
A
Carbon slows down neutrons for easier hits on U235 nuclei. Hits on U238 start plutonium creation.
Piles using natural uranium will not operate unless many tons of material are used to reduce neutron escape.
Enriching uranium (more U235) makes smaller piles possible.
B
C
D
Balanced chain will average one successful neutron for each atom split
U235 Nucleus
Same exploding
Neutron that hits
Neutron that misses
"IGNITOR" NEUTRON

T FROM ATOMIC ENERGY

. . . BUT REMEMBER THESE FACTS

1. The large-scale, controlled release of heat energy from U-235 has been fully demonstrated.

2. Beyond question, this energy could be applied directly for heating water and air, and making steam.

3. Such heat, in turn, could be applied directly, or converted into mechanical power or electricity by conventional steam turbines and gas turbines.

4. If and when U-235 in concentrations up to 10% costs less than $25,000 per lb., it may find applications, but will compete, at first, with premium fuels rather than coal.

purified normal uranium sells for, say, $10.00 per lb., the price of 140 lb. (containing one lb. of U-235) will be only $1400. This would be a very favorable price if the pile could operate efficiently with the 0.7% U-235.

Concentrating the U-235 to 100% would permit a much more compact and convenient pile — perhaps little more than small pieces of U-235, encased in aluminum to ward off corrosion, and immersed in a tank of water; this should convert the water into steam at a regulated rate.

In large part, the control would be inherent. The water as a moderator would keep the chain going, but if the reaction got too violent, the resulting higher superheating of the steam would decrease the moderator effect and thereby hold the reaction in check. Yet even if all this comes true the cost of concentrated U-235 in the near future will be many times $10,000 per lb.

Running up the concentration only a few percent above that in normal uranium may prove to be the way to get reasonable pile size and good efficiency without incurring exorbitant concentration costs.

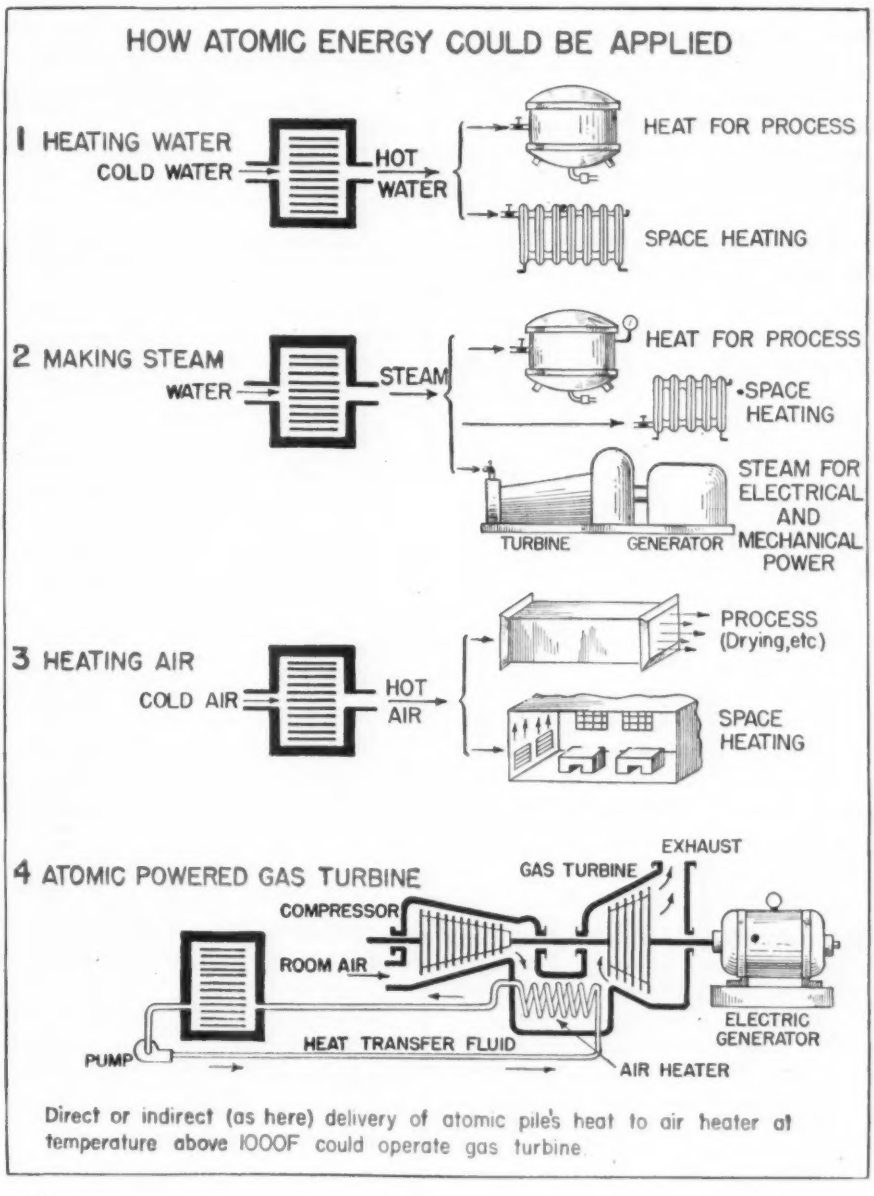
When atomic energy is applied, the starting point is heat, picked up by water, air or a special heat-transfer fluid. Intermediate heat transfer fluids may be essential in certain applications (space heating and service water, for example) where people must be protected from injury by radioactivity.

The intermediate heat-transfer fluid shown for the gas turbine would, of course, have to operate at temperatures up to 1200 F. There seems to be no basic reason why the pile itself could not be built inside the compressed-air receiver, discharging its heat directly to the compressed air.

With rather high concentration of U-235, this arrangement might be suitable for large airplane drive if excessive weight of radiation shields could be avoided.

Also, presumably, rockets and planes of the "buzzbomb" type could be powered by atomic heat delivered to the air of the jet steadily, not in puffs.

The sketches stress direct applica-



Direct or indirect (as here) delivery of atomic pile's heat to air heater at temperature above 1000F could operate gas turbine.

THESE THINGS MIGHT RESTRICT USE OF ATOMIC ENERGY

1. Ineffectiveness of large piles using normal U-235 concentration
2. High cost of concentrated U-235 for smaller, more effective piles
3. Danger from radioactivity
4. Weight and cost of shielding against radiation
5. Explosion hazard
6. Possible short supply of uranium
7. Governmental restrictions on atomic-energy materials

tions of hot air, steam and hot water to process and space heating. This emphasis is justified by the often overlooked fact that such applications of heat have many times the total energy value of all the electricity generated in the United States for all purposes.

There has been much popular speculation regarding the type of engines required for atomic-power generation. The answer is simple. Present engines, steam turbines and gas turbines can be used with little or no change. This, of course, does not rule out the possible discovery of specialized engines for atomic power, or even direct production of electricity from atomic energy.

In the long run the implications of atomic power are staggering for both war and peace. However, popular writers on the subject have undoubtedly created unreasonable hopes in the minds of readers — for example, the expectation that in two or three years the Detroit builders will market cars with built-in "lifetime" slugs of U-235 and "fist-sized" engines.

Yet it seems fairly safe to predict that atomic energy will find some commercial applications within the next five or ten years, first, probably, as a premium fuel like aviation gasoline, worth a fancy price for specialized applications where low weight or some other characteristic is important.

As the cost of concentrating U-235 is reduced and application efficiencies improved, atomic energy may compete with cheaper fuels, perhaps ultimately with coal.

Important non-power applications of atomic energy may well include the ultra-high-temperature processing and fabricating of materials — also, modern "alchemy": building and rebuilding atoms to create new elements and to produce old elements at lower costs.

Radioactivity obtained directly or indirectly from artificial atom-splitting should find many important medical and industrial applications.

Turning back to ordinary power applications, we must avoid the temptation to overstress the economic importance of lower-cost power fuel. Fuel cost is only about 17% of the gross receipts of the electric utilities. Here's another way to put it: If, after allowing for transmission losses, one kilowatt-hour delivered to the consumer from modern plants represents a coal consumption of 1.5 lb., and if the coal costs $5.00 per ton cancellation of the coal bill could not save more than ⅜ of a cent per killowatt-hour. And atomic fuel will certainly not be free.

Performance of the atomic bomb is a monument to the scientists who unlocked the secrets of the atom and suggested the basic technique of making plutonium and concentrating U-235.

From there on, the job was at least 50% engineering. The various big plants of the Manhattan Project are vast assemblages of pipes, tanks, boilers, valves, instruments and controls, installed and operated by engineers, largely designed by engineers. From now on, the speed with which atomic power becomes practical will depend on the effectiveness of the engineer-scientist team.

It is possible, of course, that national controls may completely upset the entire technical and economic pattern of this discussion. For reasons of national security the government may decide to control or restrict atomic-power materials, plants and operations in ways not yet determined.

U-235 COULD COMPETE AT THESE PRICES

other things being equal

Common fuel	*Assumed prices*	*Comparable prices for Uranium 235, dollars per pound (nearest thousand)*
COAL (13,000 B.t.u.)	$6 per ton	$9,000
	$12 per ton	$18,000
	$15 per ton	$23,000
FUEL OIL (150,000 B.t.u. gal.)	2¢ per gal.	$5,000
	4¢ per gal.	$10,000
	8¢ per gal.	$20,000
CITY GAS (500 B.t.u.)	50¢ per 1000 cu. ft.	$39,000
	$1 per 1000 cu. ft.	$78,000
NATURAL GAS (1000 B.t.u.)	25¢ per 1000 cu. ft.	$10,000
	50¢ per 1000 cu. ft.	$20,000
	$1 per 1000 cu. ft.	$40,000
GASOLINE (150,000 B.t.u. gal.)	10¢ per gal.	$26,000
	20¢ per gal.	$52,000
	30¢ per gal.	$78,000

BUT

Note that "other things" are never equal. U-235 in normal uranium form is by far the cheapest, but involves use of excessively large and inefficient "piles." The unit cost of the U-235 in enriched mixtures increases with the degree of enrichment. Over-all cost comparisons can be made only for a specified concentration of U-235 and for apparatus suitable for that particular concentration. Possible explosion danger and need to protect personnel against radiation are other important considerations.

Our SPUN-RAYON Industry Also Looks Good to British

HIGHLIGHTS: *Rayon delegation finding is same as cotton mission in regard to low unit cost despite high wages—Improved machinery and better utilization of labor seen as principal factors—Warping and weaving also reported good.*

By LEONARD H. HORN

THE DELEGATION representing the rayon staple spinners and doublers and the rayon yarn processors of Great Britain, which this spring investigated rayon-staple spinning and processing and rayon-yarn processing in this country, has just issued its report; and the comparison it makes between our industry and the British rayon industry is almost as complimentary to American production methods and techniques as was that of the prior British mission which investigated the cotton textile industry in 1944.

The contradiction of high wages and low cost of the finished product was as much of a surprise to the rayon delegation as the same phenomenon had been to the cotton mission. In the case of a similar type spun-rayon yarn—1/25s 50%-50% viscose-acetate mixture—the wage cost per pound at spindle point for U.S. mills is approximately 100% higher than for the same yarn in British mills. Yet the expense cost per pound for the same yarn is approximately 5% lower in the United States than in Britain. (In the comparison the U. S. wage cost accounts for 60% of the total yarn cost while in Britain the proportion was only 42%).

The problem of high production costs is one that the British rayon industry, like all other British industries, must solve. Otherwise, it can not hope to retain old export markets in the postwar world much less capture new ones. Eliminating Japan with its underpaid labor as a competitor will not give British manufacturers an advantage if they cannot keep their production costs below those of a high-wage country like ours.

TWO REASONS. For lower relative costs in the United States, there are two principal reasons: (1) more extensive use of new machinery embodying the most up-to-date improvements; (2) more scientific utilization of labor.

In spinning machinery, the Britishers did not find anything available or in immediate prospect that was fundamentally new. However, in the United States there is in use a greater proportion of machinery incorporating improvements such as the super-draft and the inter-draft roving frames and the high-draft attachments to spinning frames originally employed on cotton. The United States has apparently not made any greater progress than Britain in what the delegation called "the fundamental problem of the rayon staple spinner," namely the evolution of a new sliver-making technique.

In processing machinery, U. S. textile machinery manufacturers are showing more initiative in the production of machines and equipment for winding, plying, and processing than their British rivals. Also, of course, the use of modern high-speed machinery is almost universal in American mills.

The delegation seemed to be particularly impressed by the performance of American automatic weaving machinery. In a study of beaming machines, it was noted that in no single instance were there any spare ends in the beam. This pointed to the high standard of warp preparation and quality of yarn used. The good running of rayon warps in large weaving mills was attributed by the delegation to more careful temperature and moisture control in the weave rooms than in Britain.

What, according to the report, really epitomizes the difference between the two industries in technical efficiency is that, in the United States, machinery makers have produced and the mills installed more new and modified equipment than has been the case in Lancashire.

MORE BLENDING. More emphasis is apparently being placed in this country than in Britain on the blending of rayon staple, with viscose-acetate blends accounting for much the largest volume. It came as somewhat of a revelation that the American practice of increasing the acetate content of the blend resulted in improved handling properties in the cloth, especially those associated with resistance to creasing. The combination of acetate, together with higher twists than are normally used in Britain, enables American manufacturers to eliminate crease-resisting finishes, thereby saving some 6c. a pound in manufacturing costs.

The Britishers were also struck by the use made of twist in yarns in the rayon-staple spinning industry. The American practice of altering the twist factor according to the particular effect desired is apparently not as generally prevalent in Britain. The American practice when crispness is desired is to increase the twist. Examples of this are the increasing of the twist multiplier from a factor of 3.5, normal for volume production, to one of 4.5 for warp in fancy twills, whipcord, and gabardine weaves and to as high a factor as 9.5 (or even higher) in crepe yarns.

Of course, the use of high-speed mechanized processes for winding and weaving is partly responsible for the greater attention paid in this country to twisting techniques. The use of these high-speed machines makes yarns that wind and weave well imperative, and a developed technique in twisting contributes its part to achieving this end. It is a short logical step from this approach to twist for the domestic manufacturers to use it in varying de-

(*Continued on page 220*)

Members of British Rayon Mission

A. C. J. Walters, *director of the British Rayon Federation, chairman*

A. T. Bennett	A. L. Garratt	W. H. Johnson
H. Ashton	T. H. Mather	M. Leon

EUROPEAN Textile Industry Compared with United States

Estimated European Cloth and Yarn Production;[1] and Raw Cotton Requirement

Country	Machinery in Place										
	Spinning Spindles (000's)						Looms				
	Year [22]	Total Spindles	Ring Spindles	Mule Spindles	Ring and Mule on Egyptian Cotton	Equivalent Ring Spindles [6]	Year [22]	Total Looms	Non-Automatic	Automatic	Automatic Attachments
Great Britain [7]	1945	34,730	10,370	24,360	14,682	26,610	1945	493,200	473,500	18,300	1,400
Russia [8] (Est.)	1939	10,350	9,350	1,000	.....	10,016	1936	250,000	216,000	25,000	9,000
Germany	1938	10,453	7,905	2,548	920	9,603	1936	200,500	169,800	18,200	12,500
France [9]	1939	9,794	7,491	2,303	2,211	9,026	1936	202,500	157,840	40,900	3,760
Italy [10]	1939	5,324	4,774	550	800	5,140	1938	136,085	81,085	33,500 [11]	21,500 [11]
Czechoslovakia [10]	1938	3,330	2,125	1,205	668	2,928	1936	104,180	100,890	1,930	1,360
Spain	1939	2,000	1,600	400	.....	1,866	1933	66,586	61,337	5,249 [11]	.....
Belgium	1939	1,984	1,725	259	59	1,897	1936	52,000	49,300 [11]	1,900 [11]	800 [11]
Holland [17]	1939	1,241	988	253	29	1,156	1936	51,167	45,829	3,671	1,667
Poland	1939	1,764	1,360	404	237	1,629	1936	36,313	25,535	10,714	64
Sweden	1939	561	528	33	46	550	1936	15,837	6,621	8,828	388
Switzerland	1939	1,249	919	330	775	1,139	1936	21,214	15,153	4,600	1,461
Portugal	1941	639	617	22	75 [13]	632	1941	22,000	20,902 [14]	1,098 [13]	.....
Yugoslavia [17]	1939	196	174	22	29	188	1936	11,604	6,461	3,526	1,617
Roumania [17]	1940	250	250 [15]	.....	.....	250	1940	16,031	16,031 [14]	.....	.....
Hungary	1939	317	258	59	61	297	1936	14,000	11,500	1,500	1,000
Turkey	1942	244	244 [15]	.....	.....	244	1942	4,362	4,362 [14]	.....	.....
Austria	1938	742	530	212	77	671	1936	11,085	8,508	1,707	870
Finland	1939	310	276	34	32	298	1936	7,906	6,113	1,745	48
Bulgaria	1940	226	226 [15]	.....	.....	226	1940	4,200	4,200 [14]	.....	.....
Greece	1939	310	310 [15]	.....	.....	310	1939	7,840	7,537 [14]	204 [13]	99 [13]
Esthonia [18]	1939	300	300 [15]	.....	.....	300	1939	3,000	2,378 [14]	120 [13]	502 [13]
Denmark [17]	1939	103	103	.....	.....	103	1936	3,964	3,190	690	84
Norway [17]	1939	43	40	3	.....	42	1936	2,980	2,291	646	43
Latvia	1939	83	83 [15]	.....	.....	83	1939	1,639	1,639 [14]	.....	.....
Lithuania [17]	.....	.....	.....	.....	.....	.....	1936	136	136	.....	.....
Totals	.....	86,543	52,546	33,997	20,701	75,204	.....	1,740,329	1,498,138	184,028	58,163
United States	1944	24,511 [20]	24,424	87	.....	24,482 [13]	1944	529,413 [20]	22,222	507,191	.....

(U. S. Figures noted here for Reference and Comparison). Of U. S. 1942 cloth production, 13,033,000,000 yd., 86.57% or 11,283,000,000 yd. were cottons a

» THIS SURVEY of the cotton textile industry of Europe was made by Ralph C. Perkins of South Dartmouth, Mass., formerly treasurer of the Pilgrim Mills, Fall River, Mass., and the Queen City Cotton Co., Burlington, Vt., and for some time until recently an industrial specialist (Textiles) with the War Production Board and United States deputy member of the Textile Committee of the Combined Production and Resources Board.

It should be noted that for many countries the production estimates in this report necessarily must be largely a matter of practical judgment, because of the insufficiency of firm statistical data. However, this judgment is supported by a very careful study of whatever statistics and collateral information have been available on the industrial performance of these countries.

[1] *Production Estimated.* No measure has been attempted in this report of the destruction of some part of the plant and machinery of the cotton textile industry in Europe, as a result of the war. It is assumed that when the extent of war damage is determined in any country, the production potential will be reduced by the percentage of damage done, unless the decision is made to replace plant and machinery, or to operate extra hours and shifts. What has been attempted here is the development of production estimates that are realistic in terms of the machine capacity reported for Europe and the normal pattern of European performance. Increases in production over prewar figures, estimated for some countries, reflect largely the

HIGHLIGHTS: *Prewar figures can serve as postwar guide to activity—Compilation shows widespread one-shift operation, in addition to machinery known to be idle—Preponderance of non-automatic looms—Some equipment listed destroyed by war—Self-sufficiency programs of Germany and Italy indicated in footnotes.*

(or Other Fibres)[2] Cotton Broad Woven Fabrics,[3] including Rayons[4]

Estimated Cloth Production Per Year — 52 Weeks					Estimated Yarn Production Per Year — 52 Weeks				Raw Cotton Requirements Waste Factor 15%				Prewar Cotton Consumption	
Linear Yards 000's	Estimated Hr. per wk.[5] Year or Est.	Hours	Est. Yd. per Pound	Pounds Cloth 000's	Pounds Yarn 000's	Estimated Hr. per wk.[5] Year or Est.	Hours	Est. Av. No. About	Pounds per Year 000's	Bales per Year 000's	Long Tons per Year	Long Tons per Month	Million Pounds	Year
4,744,584	Reg.	48	4.15	1,143,273	1,522,092	Reg.	48	27	1,790,696	3,746	799,468	66,618	1,410	1937
3,817,758	Est.	80	3.85	991,625	1,230,000	Est.	80	21	1,447,059	3,027	646,008	53,834	1,447	1938
2,239,257	Reg.	48	4.00	559,814	814,000	1937	48	21	650,000	1,360	290,178	24,181	529	1937
2,106,000	Est.	48	4.15	507,470	600,780	Est.	48	24	706,800	1,479	315,536	26,295	589	1937
1,415,284	Est.	48	4.00	353,821	473,110	1938	57	21	405,350	848	180,960	15,080	335	1937
1,002,212	Reg.	48	4.15	241.497	294,768	Est.	62	22	346,786	725	154,815	12,901	219	1937
640,557	Est.	48	4.00	160,139	208,918	Est.	83	21	245,785	514	109,726	9,144	212	1933-34
540,800	Est.	48	4.15	130,313	178,392	1938	58	22	209,873	439	93,693	7,808	205	1937
532,137	Est.	48	4.00	133,034	122,355	1937	54	20	136,000	285	60,714	5,060	136	1937
449,738	Est.	58	4.00	112,435	136,000	1937	51	21	160,000	335	71,428	5,952	159	1939
239,511	1936	76	4.00	59,878	63,228	1938	58	19	74,386	156	33,208	2,767	66	1937
220,626	Reg.	48	4.25	51,912	65,151	Est.	48	27	76,648	160	34,218	2,851	63	1937
211,640	Reg.	48	4.00	52,910	70,547	Est.	64	20	82,997	174	37,052	3,088	47	1936-37
199,125	1936	80	4.00	49,781	32,300	1937	75	17	38,000	79	16,964	1,414	38	1937
177,143	1936	51	3.50	50,612	23,856	1940	51	18	28,065	59	12,529	1,044	28	1940
165,748	1936	56	3.50	47,357	51,850	1937	72	17	55,000	115	24,553	2,046	55	1937]
127,131	1942	135	3.50	36,323	51,893	1942	135	17	61,050	128	27,255	2,271	43	1937
118,656	1936	58	3.50	33,902	71,649	1937	45	17	95,000	199	42,411	3,534	95	1937
86,997	1936	51	4.00	21,699	28,045	1937	53	20	32,994	69	14,729	1,227	30	1937
80,808	1936	96	3.50	23,088	37,786	Est.	78	17	44,454	93	19,845	1,654	44	1940
75,421	1936	48	3.50	21,549	35,016	Est.	58	17	41,195	86	18,396	1,533	41	1939
58,032	Est.	93	4.00	14,508	24,155	Est.	65	20	28,418	59	12,686	1,057	12	1939
50,439	1936	59	4.15	12,207	16,755	1938	70	17	19,712	41	8,800	733	18	1937
33,078	1936	52	4.15	7,936	6,599	1937	50	15	7,710	15	3,174	265	6	1937
31,421	Est.	92	4.00	7,855	9,033	Est.	63	20	10,627	22	4,744	395	11	1939
2,603	Est.	92	4.00	650	.....	...	...	...	.....	.....	.....	.....	.....	.....
19,368,781	....	....	....	4,825,588	6,168,278	...	...	...	6,794,005	14,213	3,033,090	252,752	5,838	.....
13,033,000	1942	112	3.07[21]	3,699,769[21]	4,769,588	1942	112	21	5,611,280	11,238	.....	.....	3,640	1937

13.43% or 1,750,000,000 yd. were rayons.

difference between the more nearly normal full time operating schedules and the seriously curtailed schedules prevailing for some years prior to the war.

[2] *Raw Cotton Requirements.* Except where stated, cotton requirements are the prewar consumption figures; they are subject to reduction by as much as domestic waste in excess of the amount already estimated, imported waste, rayon staple, and other fibers are substituted. Adequate information is not available to permit a practical estimate of just where and how much these other fibers may be used in place of cotton. Because many growths of cotton with different weights of bales will be used in Europe, bales are calculated here as equivalent bales of 478 lb. net weight. Adjustment in the number of bales required would be made where bales of different net weights were used. The standard weights of bales in pounds used in several growing areas are listed: Argentina, gross 500, net 485; Brazil (Sao Paulo), gross 408, net 400; Brazil (Pernambuco), gross 410, net 400; China, gross 512, net 500; Egypt, gross 753, net 731; India, gross 400, net 392; Mexico, gross 500, net 484; Peru, gross 500, net 490; Puerto Rico, gross 500, net 485; Soudan, gross 435, net 423; Uganda, gross 410, net 400; Russia, gross 400, net 393; United States, gross 500, net 478. If the United States is any example, running bales may vary considerably from standard weights. It is reported United States bales are averaging around 513 lb. gross, and 491 lb. net.

[3] *Broad Woven Fabrics.* In the United States, cotton broad woven fabrics are identified as those over 12 in. in width, in Great Britain, those woven on looms of not less than 23 in. reed space. All rayon and rayon-mixed broad woven fabrics are generally understood to be 18 in. or more in width.

[4] *Rayons.* The prewar production of filament rayon yarn and rayon staple fiber is estimated in metric tons, as follows: United States, 1941,

SUNOTEX PROCESSING OIL . . .

Ends Problem of Static and Excess Dryness, Helps Woolen Mill to Process White Nylon

One of the country's biggest woolen mills was reprocessing nylon waste into yarn, using a competitive processing product.

Yarn quality varied, and they had constant trouble with static and with the stock drying out. In addition, an odor was present.

White nylon was giving particular difficulty, and the management finally called in a Sun Textile Engineer for consultation. After considerable study, he recommended a Sun Textile Processing Oil — Sunotex RSO-48.

After four months, using a mix of 2 parts water to one part Sunotex RSO-48, 10 quarts to the hundred pounds, mill engineers reported the Sun oil had eliminated the static and excessive dryness, put an end to the odor, and made possible a uniform, easily processed product.

These facts, from an actual case in Sun's sales-files, are typical of the results which are winning more and more textile men to Sun. Sun manufactures a complete line of Sunotex oils for Textile Processing, is constantly improving them, developing new oils. For your trouble-spots, call the Sun Engineer near you, or write . . .

SUN OIL COMPANY • ***Philadelphia 3, Pa.***
Sponsors of the Sunoco News-Voice of the Air—Lowell Thomas

SUNOCO **SUN INDUSTRIAL PRODUCTS**

OILS FOR AMERICAN INDUSTRY

filament 204,666, staple fiber 55,351; Germany, 1937, filament 57,193, staple fiber 99,434; Italy, 1939, filament 53,610, staple fiber 86,567; Great Britain, 1939, filament 54,450, staple fiber 27,215; France, 1939, filament 25,500, staple fiber 7,030; Russia, 1939, filament 7,700, staple fiber 22,750; Holland, 1939, filament 10,400, staple fiber 2,245; Belgium, 1939, filament 5,900, staple fiber 2,300; Poland, 1939, filament 5,000, staple fiber 1,366; Switzerland, 1940, filament 6,000, staple fiber 2,000; Czechoslovakia, 1937, filament 4,242, 1939, staple fiber 856; Sweden, 1939, filament 933, staple fiber 1,061; Spain, 1939, filament 1,399; Austria, 1937, filament 1,000; Greece, 1939, filament 318, staple fiber 66; Roumania, 1939, filament 1,210; Portugal, 1939, filament 175; Norway, 1939, filament 168, staple fiber 35; Hungary, 1939, filament 50. *Note:* The figures on rayon staple fiber for Holland, Poland, Czechoslovakia, Greece, and Norway are somewhat conjectural as to the division of the total among the five countries.

Following more or less what appears to be the incidence of prewar performance, the production of rayon goods and domestic consumption of filament rayon and rayon staple fiber, may reasonably be expected to be *not less* than the following percentages of the total supply of cotton and rayon yarn available for manufacture into goods; Great Britain, filament 7, staple fiber 5; Russia, filament 2, staple fiber 4; Germany, filament 14, staple fiber 24; France, filament 9, staple fiber 3; Italy, filament 17, staple fiber 28; Czechoslovakia, filament 7, staple fiber 1; Spain, filament 4, Belgium, filament 7, staple fiber 3; Holland, filament 2, staple fiber 3; Poland, filament 10, staple fiber 2; Sweden, filament 9, staple fiber 3; Switzerland, filament 12, staple fiber 6; Portugal, filament 1; Yugoslavia, filament 9; Roumania, filament 7; Hungary, filament 14; Austria, filament 5; Greece, filament 3, staple fiber 1; Esthonia, filament 3; Denmark, filament 12; Norway, filament 3, staple fiber 1; Latvia, filament 14. *Note:* Adding together the percentages of filament rayon and rayon staple fiber, noted for any country and applying this total percentage against the total cloth production estimated for the country, may give a rough estimate of rayon cloth production. Information is not available to permit any close estimate of the *division* of rayon among weaving, knitting, and other trades. *Note:* In some countries domestic consumption figures are influenced by the *balance* of imports and exports.

[5] *Equivalent Ring Spindles.* Two ring spindles are considered as equivalent to three mule spindles in productive capacity.

[6] *Estimated Hours per Week.* Hours operated per week are noted as, (a) the regular (Reg.) normal work week of the country, or (b) the estimated (Est.) hours per week probably required to produce the yards of cloth and pounds of yarn estimated, which estimated hours, with a few exceptions, fall within the operating practice of the country or area for which they are used, or (c) the actual average hours per week operated in the stated year.

[7] *Great Britain, Looms in Place.* Total looms in place include about 10,000 looms installed in linen mills, temporarily on cotton goods, and which presumably, on other occasions, might run on cotton or rayon or mixtures as well as on linen.

[8] *Russia, Machinery in Place.* The figures on machinery in place are those used generally in international statistics: and they are, as stated, estimates. Other estimates have been noted. One, which may have greater validity, indicates approximately 225,000 looms and 8,963,000 spindles in place in 1939. In any event, this change in the total of machinery in place would not necessarily change production figures. It would merely mean spinning operating hours per week might be increased possibly up to about 102 hours and weaving operating hours per week up to about 88 hours. There is evidence that these hours are not at variance with Russian practice.

★ ★ ★ ★ ★

This stands for honorable service to our country

In your plant or in your office, you can do further service to your country and the brave men and women who defended it by helping to spread recognition of this Honorable Service Emblem. To every wearer of this emblem let us all say, "Well done! And welcome home!"

This emblem in the form of a small, gold lapel button is being worn by thousands who have already received their honorable discharges from the armed services of the United States. It may ultimately be worn by 13,000,000 men and women. It should be recognised and respected as promptly as the uniform which preceded it.

★ ★ ★ ★ ★

[9] *France, Looms in Place.* In the number of looms in place, 8,600 linen looms are included because these looms are reported as usually working on cotton or a mixture of cotton and rayon. Of there looms, 3,200 are reported to be automatic and 360 have automatic attachments. Looms belonging to the silk industry working either on cotton and rayon mixtures or on rayon exclusively are not included in this listing of *Looms in Place.*

[10] *Italy, Inactive Machinery.* Prior to the war, a substantial percentage of machinery inactive was the usual condition in the cotton textile industry. The percentage of inactive machinery is reported as follows: 1936, spindle 22.08, looms 31.60; 1937, spindles 12.50, looms 23.35; 1938, spindles 11.56, looms 18.21.

[11] In 1933.

[12] In 1936.

[13] In 1939.

[14] *Counted as Non-Automatic Looms.* Although some of these looms may be automatic, there is no report available to substantiate this.

[15] *Counted as Ring Spindles.* Although some of these spindles may be mule spindles, there is no report available to substantiate this.

[16] *Czechoslovakia, Inactive Machinery.* For some years prior to the war, the operation of the cotton textile industry was much below loom capacity. In 1936, looms operated, it is reported, an average of 30.93 hours per week; spindles, 37.68 hours per week; and in 1937, spindles averaged 42.66 hours per week.

[17] *Cotton Yarn Imports.* In some European countries, cotton-yarn requirements have been provided in large part by imports. In a few, imports have been greater than the domestic-yarn production. The countries where these conditions are to be especially noted are listed:

	1937 Yarn Imports in Pounds	Estimated Domestic Yarn Production in Pounds
Holland	50,309,000	122,355,300
Denmark	3,929,000	16,755,000
Norway	12,040,000	6,598,937
Roumania	58,345,000	23,856,000
Yugoslavia	39,133,000	32,300,000
Lithuania	3,985,000	650,000 (cloth)

[18] *Esthonia, Inactive Machinery.* For some years prior to the war, the operation of the cotton textile industry was much below capacity. In 1936, when 5,379 looms were reported to be in place, for weaving, the average hours operated per week were reported to be 17.38, 37.37% of the normal full-time week of 46.5 hours. The latest report available (1939) lists 300,000 spindles and 3,000 looms in place. In order to use a substantial part of the domestic yarn capacity, running on ordinary work, a single shift of 46.5 hours per week, it would be necessary to operate looms reported to be in place, two shifts or 93 hours per week.

[19] *United States, Active Spindles in 1942.* Reported to be 23,313,000 ring spindles and 69,000 mule spindles, a total of 23,382,000. Equivalent ring spindles, 23,359,000.

[20] Includes 695,670 cotton ring spindles in rayon broad-woven-fabrics industry.

[21] Estimated for cotton cloth only.

[22] Most recent report available of machinery in place.

[23] *United States, Active Looms in 1942.* Reported to be 400,000 narrow looms (under 45 in.), 100,000 wide looms (45 in. and over). Total looms active, 500,000. Total of looms in place, in 1944, 529,413, includes 91,989 looms listed as in the rayon broad-woven-fabrics industry, but which do not necessarily run exclusively on rayon broad-woven fabrics.

RALPH C. PERKINS
June 16, 1945

SOURCES: "Annual Cotton Handbook," October, 1940, Comtelburo, Ltd., London, England; "Cotton Trade Statistics," circulated by Joint Committee of Cotton Organization, Manchester, England; "Foreign Commerce Yearbook, 1939," U. S. Department of Commerce; International Federation of Master Cotton Spinners' and Manufacturers' Associations, International Cotton Bulletins and "International Cotton Loom Statistics;" International Labor Office, "The World Textile Industry—Economic and Social Problems;" "Statistiches Jahrbuch Fur das Deutsches Reich;" Statistical Year Book of The League of Nations, 1941/42; Textile Division, U. S. Tariff Commission, September, 1944, Report on Cotton Yarn Exports and Imports; "U. S. Census of Manufacturers, 1939;" Whitin Machine Works, 1923, Ring Spinning Production Tables; also, several special surveys and reports.

THE FIRST ALL-PURPOSE CLEAR FOR PRINTING WITH PIGMENT COLORS

ARIDYE CLEAR 6214

Now you do not need special clears for different printing applications. For the Research Laboratories of Aridye Corporation have developed a new, all-purpose clear —Aridye* Clear 6214, a product entirely different in chemical constitution from previous clears. After vigorous tests in the Aridye application laboratories, and commercial runs in printing plants, Aridye Clear 6214 is now released for general distribution.

In addition to being an all-purpose clear, Aridye Clear 6214 has the following important characteristics:

1. It permits plissé effects to be obtained with the regular line of Aridye Pigment Colors.
2. The color value and fastness to light, washing and drycleaning obtained are equal or superior to those possible with previous clears.
3. Excellent stability during storage and on running.
4. Excellent flowing properties permitting close control of viscosity.
5. Excellent stability to hydrosulfite used in discharge printing.
6. It may be used on naphtholated grounds.
7. Lack of color and excellent transparency, insuring the full brilliancy of pigment colors.
8. It requires no change in printing plant procedure.

Method of Use

Aridye Clear 6214 can be used for all types of textile printing with pigment colors. As in the case of previous clears this new concentrated clear is made into a water-in-oil emulsion by the addition of water and a petroleum solvent. Following is a typical formula:

Clear 6214	7.5 parts
Petroleum Solvent	23.0 parts
Water	69.5 parts

(The solvent-water ratio can be adjusted to give the viscosity desired.)

The diluted clear is then used in the regular way to reduce the concentrated pigment colors to the required strength.

For a sample of Aridye Clear 6214 write to Aridye Corporation, Fair Lawn, N. J., or phone your nearest Aridye representative.

*Reg. U.S. Pat. Office

Aridye
PIGMENT COLORS

ARIDYE CORPORATION · A SUBSIDIARY OF INTERCHEMICAL CORPORATION · FAIR LAWN, N.J. · ROCK HILL, S.C. · PROVIDENCE, R.I.

WASTE CONTROL Saves Card-Room Dollars

HIGHLIGHTS: *Classification of waste may be raised by proper handling at waste house—Specimen boxes aid control of waste from openers and pickers and reveal the loss of good fiber—Standards set for waste at all processes and weekly analysis of actual waste show where losses occur.*

By SETH CARTER

WITH THE CURRENT high price of cotton, card-room-waste control is indispensable for profitable mill operation. Strict supervision of the waste house, effective training of operators in waste prevention, and careful measurement by comparison with specimen boxes of the waste occurring at all beaters and openers are the methods of control used by card-room overseers. Standards should be set by the mill for all processing waste and careful records kept of the actual waste production of the various machines.

Carelessness and indifference are important targets of the waste-control program. Too often the idea prevails that "waste is waste." At the outset of a waste-control program, waste should be defined, its causes and remedies given, and a general analysis made of the waste at all of the preparatory processes. These should be brought to the attention of the responsible supervisors.

WASTE ANALYSIS

Bale No. 10 Bales #88-97 Grade Middling

Bale mark ABCD Staple lgth. 1-in.

Invoice No. 24 Date 7-14-45

PICKER WASTE	Percent actual	Percent mill standard	Percent gain or loss
Bags and hoops	4.50	4.80	+.30
Net weight to feeders	100.00	—	—
Feeder waste	.10	.20	+.10
Vertical opener	.47	.87	+.40
Buckley opener	.92	.60	-.32
Opener sweeps	.01	.05	+.04
1st beater (Buckley)	.51	1.00	-.23
2nd beater (2-blade)	.34		
Fin. beater (Kirschner)	.38		
Picker sweeps	.13	.05	-.08
Invisible loss (cellar)	.56	.50	-.06
TOTAL OPENER AND PICKER WASTE	3.42	3.27	-.15
NET TOTAL PICKER PRODUCT	96.58	96.73	-.15
CARD WASTE			
Net weight laps	100.00	—	—
Cylinder strips	.61	3.00	-.57
Doffer strips	.12		
Flat strips	2.84		
Lickerin and fly	1.32	1.20	-.12
Clearer	.06	.10	+.04
Sweeps	.20	.20	—
Invisible loss	.94	—	-.94
TOTAL CARD WASTE	6.09	4.50	-1.59
TOTAL CARD PRODUCT	93.91	95.50	-1.59
Lap waste (deducted from gross picker wt.)	1.80	2.00	-.20
Sliver waste (included in card product)	.60	.50	-.10

Fig. 1. A weekly analysis of actual and standard waste removed will put the finger on exorbitant losses.

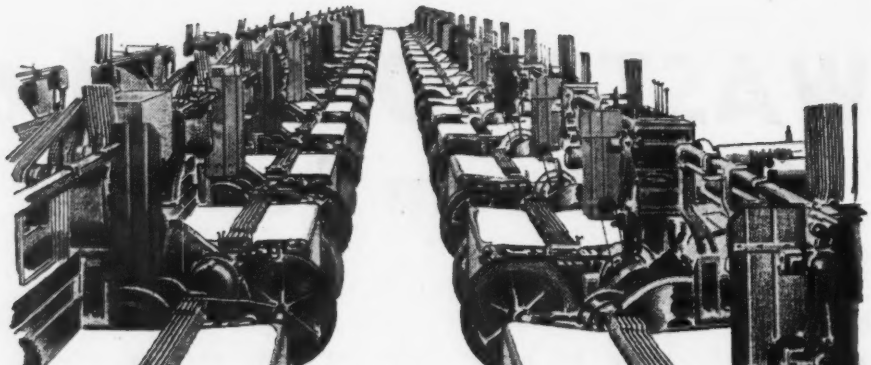
ANALYSIS OF WASTE. The waste analysis should form the basis for establishing standards for each point of cotton preparation at which the waste is made. Such a list of standards for the card room is shown in Fig. 1. A weekly check of actual against standard waste provides an effective gage for controlling waste in the mill.

The warehouse is the logical place to begin a waste analysis, for there waste begins to be made, and there also all waste is finally bagged and sold. One type of waste found in the warehouse and usually overlooked is bag pickings. Attached to the bagging when it is removed from the opened bale, this waste is usually not recovered at all or it is recovered with fringes of jute bagging attached. The latter will cause trouble at every machine in the mill, and all bag pickings should be placed in a separate box and baled separately. It must be carefully inspected before being entered into the regular work.

Correct classification of waste at the waste house may save money for the mill. In many cases, a low-priced waste may be brought into a higher-priced bracket by the simple process of culling and classing. An example of this is the case of a mill which culled its lickerin waste. By separating the heavy trash from the clean fly waste, the mill obtained a higher total price for the lickerin waste than it had when the waste was not separated. Following up this method of handling, the slubber back-waste was separated into clean and oily classes, and they likewise brought a higher price.

In a program of waste control, it is advantageous to post in the waste house a price list of the different kinds of waste. With such a list, the person

Magnesium brings stability and balance to your machines



cuts inertia— steps up speed— in moving parts

It's *speed* you want in textile operations—but not speed alone. Magnesium machine parts give you *dependable* high speeds . . . because they have lightness and also that important quality known as dimensional stability.

That simply means magnesium has just about licked the problem of distortion . . . of permanent growth and contraction . . . common to some non-metallic parts chosen for their lightness. Magnesium alloy parts are entirely comparable in weight—and much stronger.

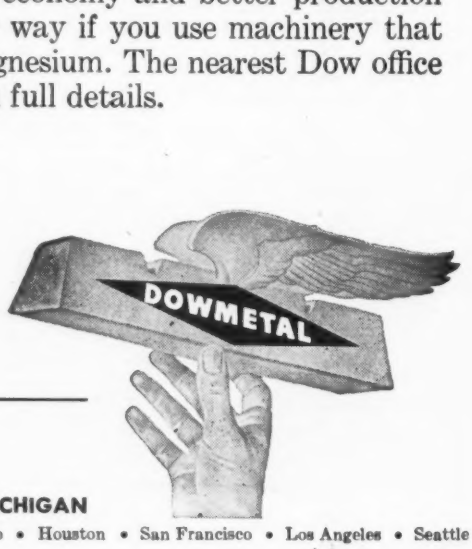
It all adds up to dynamic balance, essential to high-speed operations.

Inertia-cutting magnesium is particularly useful in rotating machine parts that continually start and stop . . . in parts with high-speed reciprocating motions . . . and many others where high inertia means added wear and tear.

There's real economy and better production coming your way if you use machinery that contains magnesium. The nearest Dow office can give you full details.

MAGNESIUM

THE METAL OF MOTION



MAGNESIUM DIVISION, THE DOW CHEMICAL COMPANY, MIDLAND, MICHIGAN

New York • Boston • Philadelphia • Washington • Cleveland • Detroit • St. Louis • Chicago • Houston • San Francisco • Los Angeles • Seattle

in charge of the waste house may be able to reclassify much waste into a higher-price class. Constant contact with the waste dealer by the card-room overseer or the cotton man will also prove profitable, for the waste dealer is well informed as to what waste customers require and may offer good advice on the proper classification of waste.

OPENING AND PICKING. All waste from feeders, vertical openers, Buckley openers, and pickers should be examined daily. The presence of good cotton in the droppings denotes faults in machine adjustments which should be corrected immediately. Specimen boxes shown in Fig. 2 are a great aid in the control of picker droppings. The specimen box contains a sample of the correct richness of waste that should be extracted; and by comparing it with actual droppings, the supervisor may prevent the loss of good fiber. In the case of the vertical opener, a sample which is too rich with good fiber would indicate that a change in the setting of the grid bars should be made.

The specimen-box test should be applied to all opening and picking machines which remove an appreciable amount of waste. Settings and speeds will sometimes get out of line, and only by constant checking can they be maintained. Proper settings and speeds of opening and picking equipment will often result in saving 1% or more of good cotton which otherwise would be thrown into a low-priced waste.

Sweepings from the opener and picker room should be carefully culled to prevent the loss of good cotton. While lap-end waste and rejected laps can be unrolled and reworked in the hoppers, they represent a loss in net picker production. Most mills establish a standard of about 3% for rejected laps, and insist that they do not exceed this figure.

WASTE AT CARDS. Card waste can be reduced by proper settings and operation. The quality of the delivered card sliver is not necessarily determined by the amount of waste removed. Excessive waste removal will not improve the product, and the determination of the minimum amount of waste to remove for the required yarn quality is an important factor in the waste analysis at the card.

Flat strips, the greatest source of card waste, generally comprise about one-half the total card waste. Fiber arrays of flat strips will show a large amount of good spinnable fiber, and many mills have reduced this amount by closer settings on the front and back plates and by reducing flat speeds. It will prove profitable to experiment with different plate settings and flat speeds. Flat strips have been reduced as much as one-third in this manner, and fiber arrays show that this saving is in good fiber, there being little change in the amount of trash removed.

On certain classes of goods, mills recover and rework flat strips. One of the most efficient methods is to comb the strips at the back of the card instead of the front. This drops the strips back onto the lap and reworks them automatically. One-half the good fiber in the strips is recovered in this way, but there is a slight increase in lickerin waste.

Nep-count standards are also useful in determining the waste allowances on the card. With a standard nep-count which shows the number of neps permissible in the card sliver, any waste removed beyond this quality requirement can be shown up as preventable, since it accomplishes no useful purposes. Further savings can be obtained at the card by proper instruction of operators. Laps and sliver cans should be handled carefully during the creeling and doffing operations. Ends should be pieced up promptly, and doffs at the card should be scheduled so that cans are not overrun.

COMBERS AND FRAMES. Clearer and sliver waste account for most of the loss in stock at the drawing frame, sliver lapper, and ribbon lapper. The greatest opportunity for savings in waste at these machines is at the drawing frame. Yardage-measuring knock-offs should be used on the finisher drawing in order to control the lengths of sliver in the cans. If this is not done, the variation in doff lengths will cause an excessive number of piece cans at the slubber.

Comber waste, in the form of sliver, lap, or clearer, requires the same careful supervision as drawing-frame waste. In order to maintain the quality desired in combed yarns, it is necessary to remove a high percentage of waste as noils. However, this percentage may vary considerably when some fault in setting or timing occurs on the machine. Frequent percentage tests should be made at the comber to detect these faults. Fiber arrays of comber noils will reveal the loss of any long fiber which may occur because of faulty settings.

Slubber and roving waste include clearer, flyer, and sliver waste. The handling of clearer and flyer waste needs no discussion, but the problem of sliver waste is a constant source of expense to the mill. Many mills which creel roving single in spinning, require slubber operators to dump all sliver waste so that it can be reworked in the picker room. If sliver waste exceeds 2 or 3%, this practice is expensive. By exercising care, operators can splice the piece cans and run them up on the end spindles of the slubber.

In connection with the turning of cans, tests on knitted fabrics have proved that the splicing of sliver behind the slubber cannot be detected in finished goods. These tests, conducted on yarns which were made from slubber roving going direct to spinning, indicate that it is practicable for mills to adopt this method of handling piece cans to reduce reworkable waste.

Fig. 2. An actual sample, left, of first-beater waste from the picker is compared with specimen-box waste. The cotton is 1 in. Middling.

More than 90% of the Hosiery Made in America is Dyed in SMITH-DRUM Machines...

...and Here is the Reason

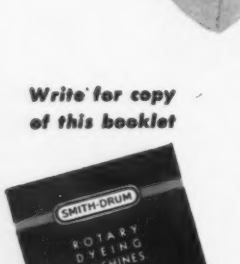
Dependable performance has earned for Smith-Drum Hosiery Dyeing Machines a position of outstanding leadership in sales over a long period of years. It is conservatively estimated that at least 9 out of every 10 pairs of hosiery made in this country and Canada are dyed in Smith-Drum Machines.

The rugged construction and careful workmanship which go into every Smith-Drum Machine are evidenced by the fact that many have been in daily operation for twenty-five years and longer, *with very low maintenance expense*. Even when it is necessary to send a Smith-Drum Machine to the factory for overhauling, it can usually be put in first-class condition at only nominal cost.

If you are interested in hosiery dyeing equipment that will reduce maintenance costs to rock bottom, get the complete facts on these Smith-Drum Machines. Descriptive booklet will be sent upon request. Write to . . .

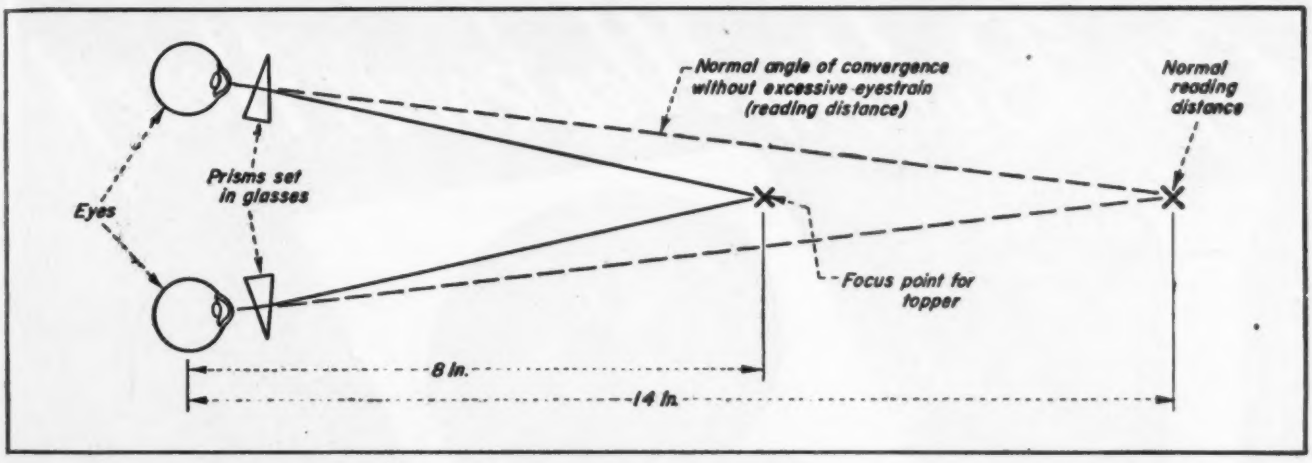
Smith, Drum & Company, Allegheny Ave. at 5th St., Philadelphia 33, Pa.

Write for copy of this booklet



SMITH-DRUM Textile Machines

for hosiery dyeing, skein dyeing, package dyeing, beam dyeing, piece goods dyeing, package drying, skein mercerizing, warp mercerizing, hosiery inspection.



The way in which prisms help the looper by assisting in focusing is shown in the diagram. Industrial glasses can incorporate prisms in the same manner as bifocles, the upper part of the glasses being of clear glass. These should be provided as a part of the working equipment.

KNITTING OPERATORS
Aided by Industrial Glasses

HIGHLIGHTS: *Normal eye tests not suited for use in selection of loopers and transferrers unless given special interpretation—Production increases possible when special occupational glasses are employed.*

By **HAROLD E. REED,** *Assistant Editor, TEXTILE WORLD*

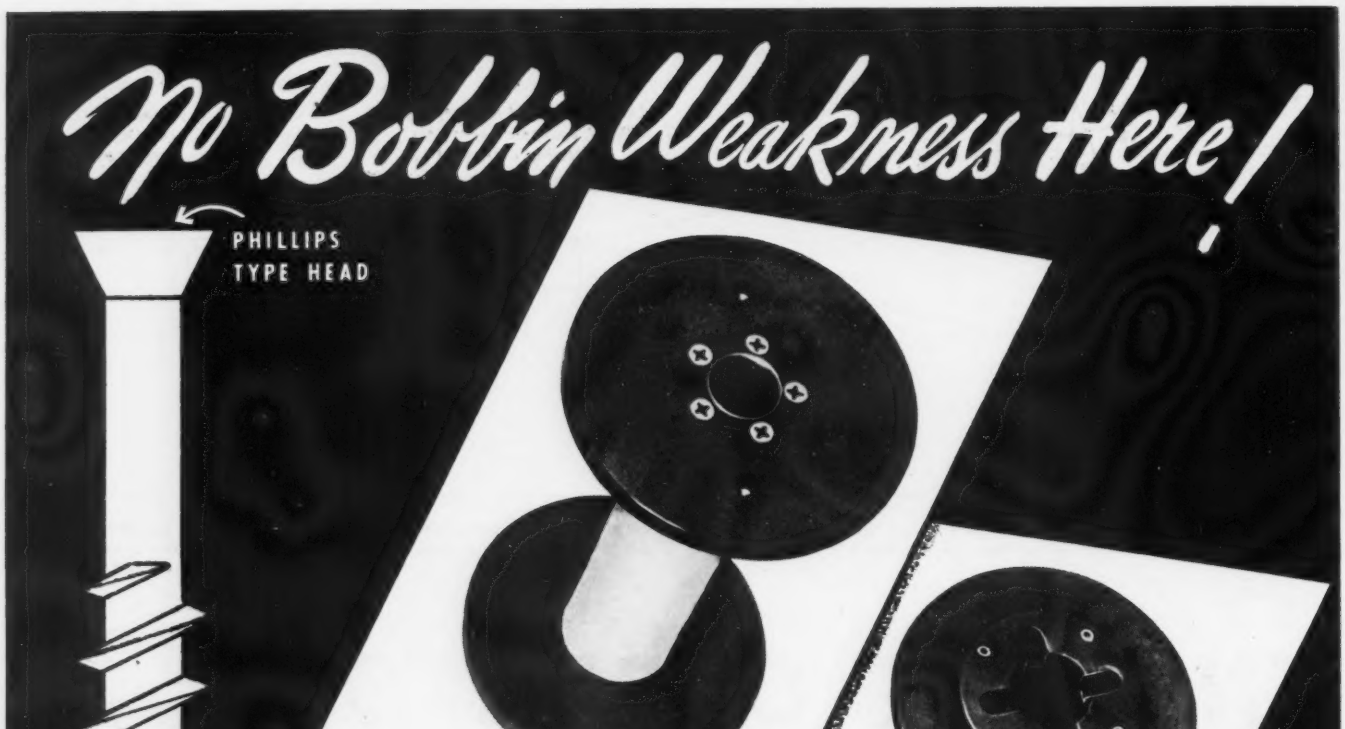
Looping operations as conducted by hosiery operators may be speeded to obtain a 5% increase in production by the use of industrial glasses to overcome eye strain caused by the necessity of having the work close to the eyes.

EXPERIMENTS CONDUCTED over a period of time indicate that in looping operations increases in production of 5% may be realized by the simple expedient of using industrial glasses. Also learners reached their top production in a shorter time when fitted with glasses.

Certain operations conducted in knitting, such as looping and transferring, require a long period of eye adjustment. That is, the eyes cannot and do not react naturally when most persons first enter this type of work. The distance at which work is held from the operator in looping is usually about eight to ten inches. The normal distance at which work or reading material is held from the eyes by a person of normal eyesight is about 14 to 16 in. This means that a person to handle looping most easily should be one that is nearsighted. However, there is another requirement—that of convergence. A looper should also be able to focus or converge her eyes on an object that is located about eight inches from her without causing excessive strain of the eye muscles.

RELATION BETWEEN LIGHTING, PAINTING, AND SEEING. The term "opthalmology" may be defined as the science that deals with the eyes and the treatment of eye diseases. Recent developments in the field of lighting and painting of plant interiors have

No Bobbin Weakness Here!



Design of the new type screw that goes into LESTERSHIRE Bobbins is shown in the above drawing. This is our newly-developed end grain Anchor Screw, capable of holding up to 7,500 pounds pressure. They are standard in all LESTERSHIRE Bobbins.

Need for greater strength and wearing qualities in Bobbins led LESTERSHIRE to research and develop this special Lascrew (LESTERSHIRE ANCHOR SCREW) A screw that will hold in end-grain of hard maple even stronger than a rivet — so strong the screw heads pull right through whatever material is used for Bobbin Heads — on Bakelite even ½" thick, or through ⅛" Steel Plate reinforcing over ⅜" thick Fibre — *without budging the screw!*

There are several sizes of Lascrews. Any type of Bobbin can be made. Yarn on these Bobbins may be processed by water, steam, heat, etc., with no loosening of these screws in the wood.

Bobbins which heretofore have given much trouble and but short life due to dimensional limitation (large spindle hole with relatively small diameter barrel) are, with Lascrew construction, made strong and durable, illustrated above are two such Bobbins.

PRECISION SPECIAL PURPOSE BOBBINS

LESTERSHIRE SPOOL & MFG. CO.

JOHNSON CITY, NEW YORK

hastened the study of opthalmology in textile mills.

Plants that have installed new lighting fixtures, especially the fluorescent lamps, have found that the desired results from these lighting installations are not always forthcoming. Next, the matter of condition of paint in the plant is brought to the attention of management by greater brightness and better seeing brought about by the lighting installation. To correct these conditions mills have resorted to functional painting. The results of such painting have been reported in TEXTILE WORLD along with the benefits that have been obtained from lighting installations.

Having thus improved the working conditions of their employees, some mills have found that the operators have complained about their eyes. Each of the improvements outlined have, of course, resulted in a slight increase in production and a reduction in defects of the finished product. In some instances the resulting eye strain may be caused by improper painting so as to cause excessive glare on the working surface, by having the operator facing the light, or by having too great a difference between the reflectance intensities of various objects such as the bench and the walls, etc., that come within the eye range of the worker. In such cases it may be possible to correct or to remedy many of these troubles in the plant. Also, the cause of eye strain may be attributed directly to the conditions surrounding the work.

EYE STRAIN THROUGH WORKING CONDITIONS. A person with normal eyesight, to do looping or transferring work, experiences considerable difficulty, as previously noted, because the object is held at a distance that is much closer to the eyes than that normally used by most persons. As a result, the operator is straining her eyes to see her work, and, as the work is for long periods and with very little time for rest, the eyes soon tire.

It has been found that, when new operators are trained who have normal eyesight when starting, after about six months of work their eyes tend to adjust themselves to the working conditions. That is, after six months new loopers who previous to this time had normal eyesight have become nearsighted. Of a group of 206 hosiery loopers of which 70% had normal distance acuity, that is, could see normally at a distance of 20 ft. and at 16 in., only 58% could pass the test for normal seeing after 10 months. After a period of 20 months of work only 53% passed and after 50 months 46% passed. This indicates that distance acuity tends to decrease with experience. This relationship holds whether corrective spectacles are worn by the operator or not.

Focus posture tendency, the ability of an operator to focus or converge on an object at a set distance without causing the eye muscles to tire or to be placed out of balance, must also be considered when selecting loopers. Tests have indicated that those experienced operators who had normal focus posture tendency produced on an average about 3.20 doz. per hr., whereas those with better than normal posture produced much less. For those with tendency less than normal, who can focus on an object at a much closer distance, production increased quite rapidly and progressively above the production of the other operators. In this instance the production was about 3.90 doz. per hr.

At first glance it would appear that an operator having a very poor focus posture tendency would produce the greatest production. In practice this is not always true because the age factor must be considered. It has been found that the older a person grows the greater is the distance at which he focuses, thus tending to reduce the benefits of near muscle balance. This also applies to acuity vision. However, industrial glasses can correct these tendencies.

Experiments based on 166 hosiery loopers showed that as the loopers gained experience in their work their focus posture changed. After a period of about 12 months their focus posture decreased from above normal to considerably under and they had near focus posture. After the first twelve months the curve leveled off and there was very little change.

SELECTION OF LOOPERS. Practice in selecting loopers and other operators in knitting mills, when some of the

(Continued on page 234)

** Several years ago a number of experiments were conducted in knitting mills in an attempt to obtain information and data as to the operations for which special industrial glasses may be used to correct eye strain and aid in creating better working conditions. In every case production increases were obtained and the operators fitted with industrial glasses found that their work was less tiresome. Experiments mentioned herewith are recorded in the books "Industrial Psychology" by Tiffin and "Industrial Ophthalmology" by Kuhn. A recent application of the principles covered, and as conducted at Magnet Mills, appeared in the August issue of TEXTILE WORLD.*

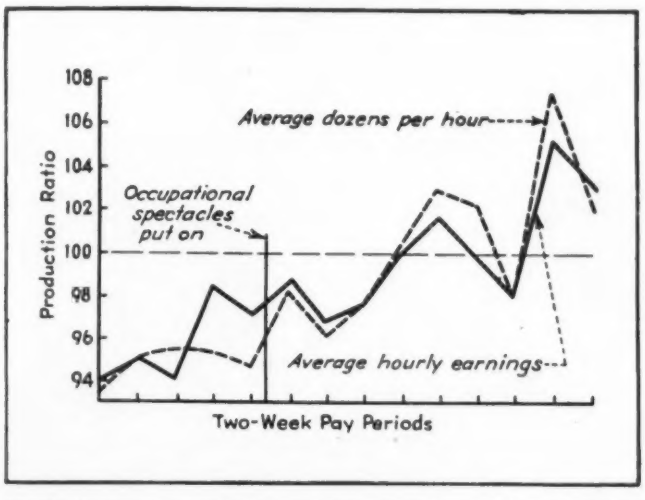


Fig. 1. Increase in production and hourly earnings made by learning loopers when fitted with industrial glasses.

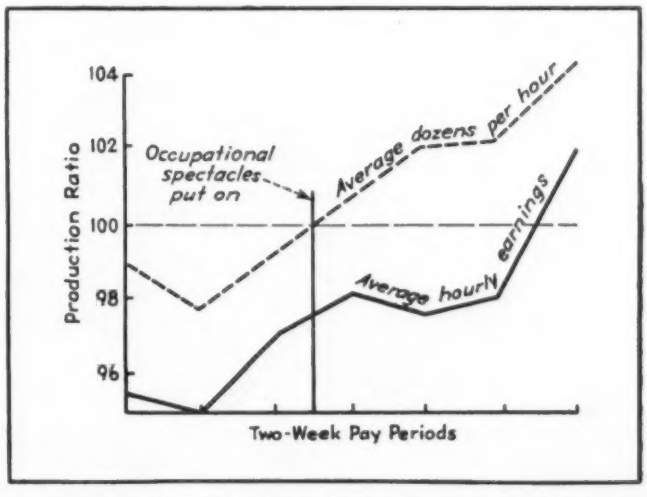


Fig. 2. Production and hourly earnings increases obtained when experienced loopers were fitted with industrial glasses.

Charts reprinted from INDUSTRIAL PSYCHOLOGY, by Joseph Tiffin, published by Prentice-Hall, Inc.

LET ONE CALL DO IT ALL when you need STAINLESS

To speed your Stainless on the way... get Industrial on the wire!

You are assured of same-day attention to all your Stainless needs when you telephone *first* to Industrial . . . where America's largest, most diversified warehouse stock of Stainless Steels is instantly available.

If it's Stainless, Industrial has it . . . with the emphasis on prompt service. What's more, you pay no premium over mill prices, regardless of quantity.

Expert chemical, metallurgical, and engineering counsel is yours for the asking, too . . . if you have a Stainless selection or fabrication problem. Request help if you need it . . . and send for your free copy of the Industrial catalog. Industrial Steels, Inc., 250 Bent Street, Cambridge 41, Mass.

JLMCo CI-J2

SURFACE HARDENING PROCESS ADDS LIFE TO STAINLESS PARTS

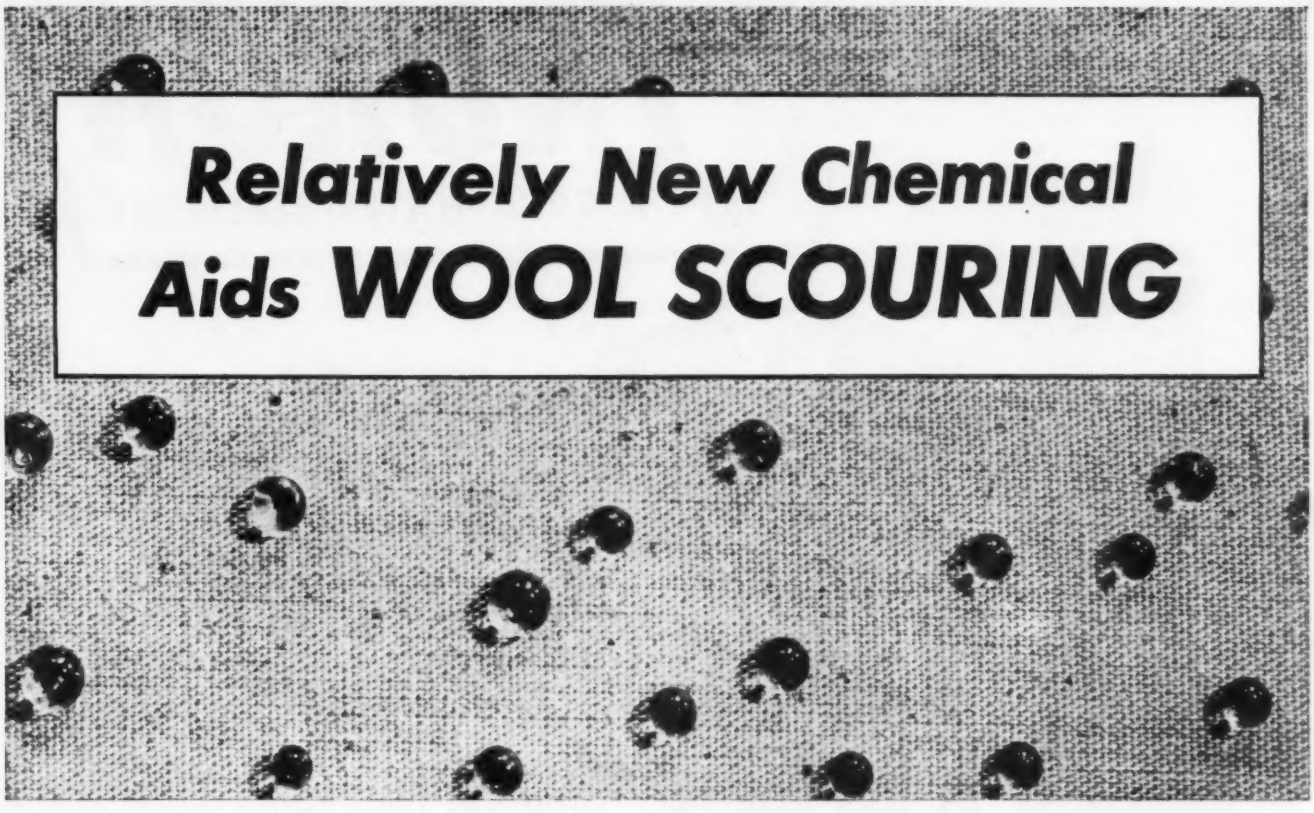
If you make or use Stainless parts, investigate the Stainless Surface Hardening Company's efficient new process. Gives up to 1100 Brinell surface hardness. Combines the corrosion resistance of Stainless with the abrasion resistance of a nitrided surface.

Write Stainless Surface Hardening Co., 255 Bent Street, Cambridge 41, Mass. Subsidiary of Industrial Steels, Inc.

TROwbridge 7000
Teletype: Cambridge 547

INDUSTRIAL STEELS INC.

Everything in *Stainless*



Relatively New Chemical Aids WOOL SCOURING

ALTHOUGH THERE ARE in the literature of the last 90 years several references to sodium tetraphosphate, the sodium salt of tetraphosphoric acid, its status was that of a laboratory curiosity rather than of an article of commerce until its distinctly useful properties were described in detail by Fiske and Bryan in 1934, when several methods of manufacture were outlined by the same investigators.[1]

Produced by rapid chilling after fusion at high temperature, sodium tetraphosphate is a clear, non-crystalline glass having the chemical formula $Na_6P_4O_{13}$ and the theoretical composition Na_2O 39.6%, P_2O_5 60.4%. As manufactured, the tetraphosphate is in the approximate form of spheroids, or "beads", and as such is widely used in the textile industry for the preparation of concentrated stock solutions. The material can be ground, and for some purposes is preferred in one of the three available degrees of particle subdivision. The properties of sodium tetraphosphate given in the table point out that it is a very soluble, mildly alkaline polyphosphate capable of holding calcium as well as magnesium in soluble but only slightly ionized compounds or radicals.

It is this property of tetraphosphate that gives rise to its great value as a water softener[2], since the water is completely softened to soap without the formation of precipitates, as in older softening procedures employing alkalies. Thus a water treated with the proper amount of tetraphosphate will remain clear; no objectionable sludge, scale, or scum will be produced; yet soap, alkali, or a combination of these may be added without the formation of their insoluble calcium or magnesium salts. It follows that in a detergent operation employing soap, the precipitation of insoluble soap is entirely prevented. The problems created by the soaps of the polyvalent metals (including those of iron, copper, aluminum, zinc, nickel, and many other cations in addition to calcium and magnesium) are too well recognized to require exhaustive discussion; every book on textile wet-processing stresses the importance of an adequate supply of soft water if difficulties in scouring, fulling, bleaching, and dyeing are to be successfully avoided. Lime-soap precipitation upon the wool is not removed in rinsing and results in a stock that is off-color, harsh, "tacky", and of a disagreeable odor.

HIGHLIGHTS: *Sodium tetraphosphate, former laboratory curiosity, removes lime precipitation and saves soap — Softens water — Stock solution is favored — Lowell Textile Institute aids in research.*

By A. H. RAZEE
Rumford Chemical Works

REMOVING LIME SOAP. Of equal importance is the ability of sodium tetraphosphate to redissolve or regenerate lime soap already present, although this property relates less closely to scouring raw stock than it does to wet finishing and dyeing. However, lime soap has been found in substantial quantities in the fleece[3], and in its removal sodium tetraphosphate is of great value. The stripping of insoluble soap was formerly accomplished by treatment with an acid, preferably hydrochloric, followed perhaps by an alkaline bath to neutralize the excess acid and assist in the removal of the fatty acid by a combination of emulsification and saponification. With sodium tetraphosphate, however, the removal of lime soap may be made an integral part of the scour, using only enough of the phosphate in excess of that required for water softening to dissolve the residual soap. This property

TRUKON

A GOOD WATER-REPELLENT

• You will find *distinct advantages* in using TRUKON. For one thing, it is a stable product — the last to be used from the container is just like the first. Fabrics treated with TRUKON are made uniformly water-repellent, spot and perspiration resistant. There's no great problem in using it — it is miscible in cold water — it's perfectly safe in handling. Fabrics which are "Trukonized" are more wear-resisting. TRUKON is approved and used by the U. S. Quartermaster Corps in its reprocessing of military apparel. All the aids-to-selling that arise from making fabrics water-repellent are obtained in full measure by using TRUKON. . . . . **Hart Products Corp.**

1440 Broadway • New York 18, N. Y.

Manufacturing Chemists

TECHNICAL SERVICE AVAILABLE

Our labofatories are at your service to help solve your processing and finishing problems. Practical demonstrations in your own plant conducted upon request.

HART PRODUCTS

for Every Phase of Textile Processing

THE COUNTRY OVER, IT RAINS ONE DAY OUT OF THREE

of the phosphate may be readily demonstrated in the laboratory by scouring a piece of woolen cloth in a mixture of soap and calcium chloride solutions, followed by first a warm water rinse and then by a rinse in tetraphosphate solution. It will be seen that the tetraphosphate redissolves the insoluble soap, producing a clear solution and an abundant lather. This test can be made quantitative by measuring the amount of the phosphate required to produce a stable foam, and also by determining by a suitable extraction procedure the amount of fatty acid remaining in the goods. Additional proof of the production of sodium soap is the lowering of the surface tension of a solution containing calcium soap upon the addition of sodium tetraphosphate.

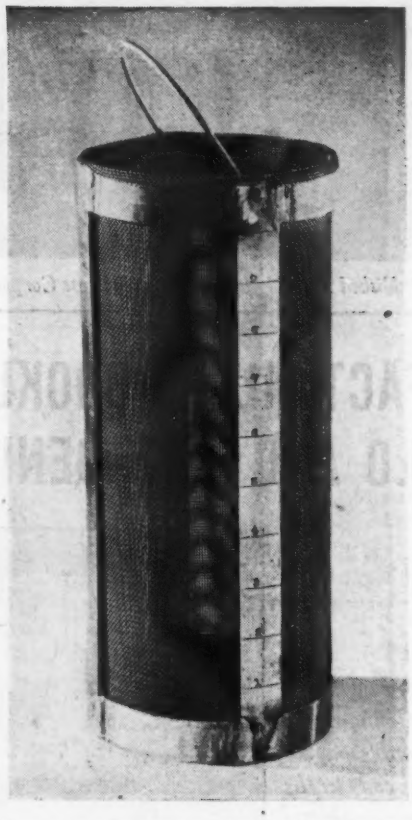
LESS SOAP. Of secondary importance is the fact that the soap requirement of a given water is greatly reduced by the use of tetraphosphate. That is, soft water consumes less soap than hard water, and waste is eliminated. The stock is also conditioned, with a consequent reduction in its soap consumption. This is particularly important in the case of a wool containing alkaline earth dusts from the grazing land, while for lime-pulled wools the value of the tetraphosphate is particularly high. Some of these wools are received by the scourer with pieces of calcium sulphide adhering to the fibers, despite the use of beaters and openers. Even a good grade of lime-pulled wool will contain appreciable quantities of lime which must of necessity precipitate part of the soap used in scouring. Even the solvent scour may give trouble, since the salts of calcium are insoluble in the common solvents. Sodium tetraphosphate need not be used in quantity sufficient to dissolve all of the calcium salt, for it functions as a surface-active agent against lime compounds, thereby facilitating their removal.

By a combination of mechanisms, including softening the process water, conditioning the wool, and redissolving lime soap in the wool, the total soap requirement is significantly reduced with a resulting economy in soap consumption.

The use of sodium tetraphosphate in wool scouring was first proposed by Fiske and Bryan[4], who also indicated the value of their material in other textile processes, including scouring rayon, kier-boiling cotton, boiling-off silk, and in dyeing various fibers to improve penetration and prevent streaks or spots. This paper treats only the scouring of wool, not other textile applications of this phosphate.

SOFTENING OF WATER. In early mill work with sodium tetraphosphate, the material was considered a water softener and rinsing agent only and was therefore added to the last bowl, just ahead of the clear-water rinse. Soap is frequently used in this bowl to impart "polish" to the wool and, traditionally, to enhance the rinsing of soap and alkali from the stock; but the phosphate was intended to dissolve and remove any insoluble soap coming from the preceding bowls, while promoting the removal of the soluble soaps as well. Used in quantity sufficient to soften the water, additions were made at regular intervals to maintain the concentration. This procedure resulted in considerable improvement, the wool appearing whiter and loftier. However, it was clear that this application was curative rather than preventive, and further mill trials were run using the phosphate to soften completely all of the water in which soap was used. The standard 20% stock solution was prepared, using the glassy form of the phosphate, and this solution added to the scouring bowls before the soap or alkali and at regular intervals until the liquor was dropped. No adjustment of soap or alkali concentration was made; the phosphate was, at that time, thought

(*Continued on page 230*)



Screen is used to dissolve beads of sodium tetraphosphate such as shown in the headpiece. Note the inch scale for measuring correct amount.

Properties of Sodium Tetraphosphate* $Na_6 P_4 O_{13}$

Specific Gravity	2.55
Refractive Index	1.48
Heat of Solution at 20°C. (Concentration 1 gm./100 gm. H_2O)	40 calories/gm.
Fusion Point (Approx.)	600°C.

Solubility (Approx.)

Temperature	Parts/100 Parts H_2O	% Solids in Sat. Solutions
20°C.	165	62.3
60°C.	107	51.6
95°C.	178	64.0

pH of Solution at Various Concentrations

Concentration	pH
0.01%	9
0.1%	9
1.0%	8.5
10.0%	7.5

Properties of 20% Sodium Tetraphosphate Stock Solution

Solids: 2 lb. per gallon
8 oz. per quart
4 oz. per pint
0.2 g. per milliliter

Density: Specific Gravity 20°/20° 1.191
°Baume (20°C.) 23.2

pH 7.20

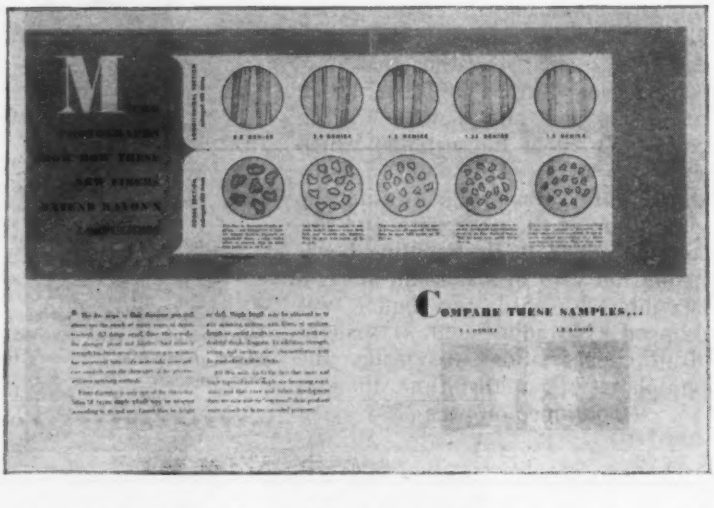
Titratable Na_2O 2.0%
Freezing Point −4°C. or +25°F.
Heat of Solution 40 calories/gm.

Temperature increase in making 20% solution approximately 11°C. or 20°F.
Viscosity (20°C.) 7.5 centipoises

RAYON REPORTS

Published Monthly by American Viscose Corporation, New York, N. Y. SEPTEMBER, 1945

FACT-FILLED BOOKLET DESCRIBES NEW 1.0 AND 1.25-DENIER RAYON STAPLES



One of the informative double page spreads in the new booklet

American Viscose Corporation's recently announced new 1.0-denier rayon staple fiber . . . as well as a new 1.25-denier rayon staple fiber . . . are interestingly discussed and described in a fact-filled booklet that the company has just released.

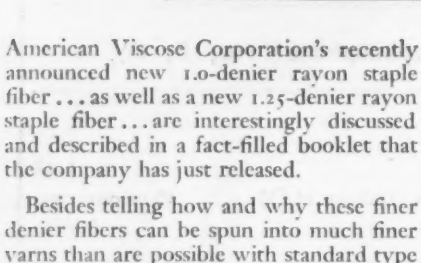
Besides telling how and why these finer denier fibers can be spun into much finer yarns than are possible with standard type rayon staple fibers, the booklet includes swatches of some of the new and varied rayon fabrics now in commercial production. Many of these fabrics would not have been possible without the new fibers. They run all the way from spun rayon sheers and fine prints to a double tricot spun rayon and cotton fabric for women's gloves.

While perhaps the most important feature of the new staples is the added strength they give to textiles of comparable weight, the many physical differences between the new deniers and the old are graphically shown in the booklet as well. Microphotographs and actual samples of the loose staples assist in telling the story.

On one of the sixteen pages it is explained why yarns as fine as 100/1 cc. can be commercially spun from the 1.0-denier rayon staples, and yarns as fine as 70/1 cc. from the 1.25-denier staples.

Many other qualities of the new staples are detailed, while the booklet also lists important practical processing suggestions.

Greige mills, converters, dyers and finishers, and garment manufacturers are invited to write for copies. Address American Viscose Corporation, 350 Fifth Avenue, New York 1, N. Y.



Complete facilities for studying rayon textile production and for conducting original research are provided by The Textile Research Department of the American Viscose Corporation at Marcus Hook, Pa. There, full-size commercial machinery for practically every operation in the textile industry is installed within a single, unique plant. Shown is a Whitin tricot knitting machine, typical of the varied equipment with which the Department technicians work.

"VINYON" SAVES WORKERS' SHIRTS

Special acid-resistant work shirts made of "Vinyon" have been made by the American Viscose Corporation for the use of employees in the spinning departments of several of its plants where employees and their clothing are daily exposed to contact with acids.

In spinning viscose rayon, the viscose solution is hardened into filaments in an acid bath which contains sulphuric acid, sodium sulfate, zinc sulfate, and other ingredients. Contact with these acids rapidly deteriorated the shirts usually worn by employees and this led the company to experiment with "Vinyon" yarn, which is known for its acid-resistant properties. Reports to date on the "Vinyon" shirts indicate that they are giving exceptional service and show no harmful results from constant exposure to acids.

The shirts are of an open knit construction and are not intended to provide protection against possible acid burns. Their purpose is to provide a practical work shirt that will stand up under repeated contact with acids.

MAKE USE OF 4-PLY SERVICE

1 PRODUCT RESEARCH
Helps you get the right yarn or fiber.

2 FABRIC DEVELOPMENT
Helps you design new fabrics.

3 TEXTILE RESEARCH
Helps solve production and finishing problems.

4 "CROWN*" TESTED
Helps provide scientific selling facts.

AMERICAN VISCOSE CORPORATION

America's largest producer of rayon yarns and staple fibers

Offices: 350 Fifth Avenue, New York 1, New York; Charlotte, N. C.; Philadelphia, Pa.; Providence, R. I.; Washington, D. C.; Wilmington, Del.

Plants at: Marcus Hook, Pa.; Roanoke, Va.; Lewistown, Pa.; Nitro, W. Va.; Parkersburg, W. Va.; Meadville, Pa.; Front Royal, Va.

*Reg. U. S. Pat. Off.

OILLESS BEARINGS Aid Machine Maintenance

HIGHLIGHTS: *Machine wear decreased and operation improved by use of oilless bearings—Spinning bolsters ran four years with no signs of wear—Cards fully equipped with oilless bearings reported in good condition after test run of one month —Oilless materials find many uses from opening through finishing.*

By C. MALLARD BOWDEN
Southern Editor, TEXTILE WORLD

OILLESS BEARINGS have been given new emphasis because of the need to decrease wear of irreplaceable parts during the war. Installed in most machines from opening through finishing, these bearings have improved maintenance and operation of certain parts, cut oiling costs at many operations, and increased the life of machine parts. Master mechanics and maintenance superintendents predict increased use of oilless bearings and parts now that the war is over. The wide variety of oil-retaining materials manufactured and the intensive research conducted by textile-machinery manufacturers indicate that new machinery as well as present equipment may soon be equipped with some form of oil-retaining bearings.

While mill men emphasize that they do not use all oilless bearings for elimination of oiling, the bearings do serve this purpose in cases where parts are difficult to oil or where cloth may be spoiled by oil contact. Wooden idler blocks for spinning-tape idlers illustrate one of the purely non-oiling uses. The various bearings are oil impregnated and will operate the life of the bearing without oiling, but engineers and overseers point out that the greatest performance and savings result when the bearings are operated to preserve their oil content. In this way, the oil content acts as a safety reserve which

(Continued on page 252)

* The first oilless bearing is said to have been discovered accidentally over 200 years ago. A miller near Radnor, Pa., oiled his wooden bearings and found that they retained the oil indefinitely. Today, there are many oil-impregnated materials such as wood, powdered-metal bronze, sintered iron, and graphited metals of various kinds, made into bearings, bushings, gears, studs, solid-bar stock, cored-bar stock, sheets, plates, and rivets. Mills are now using oil-impregnated parts to improve machinery maintenance and operation. The term "oilless" is generally accepted in the trade as meaning oil-impregnated.

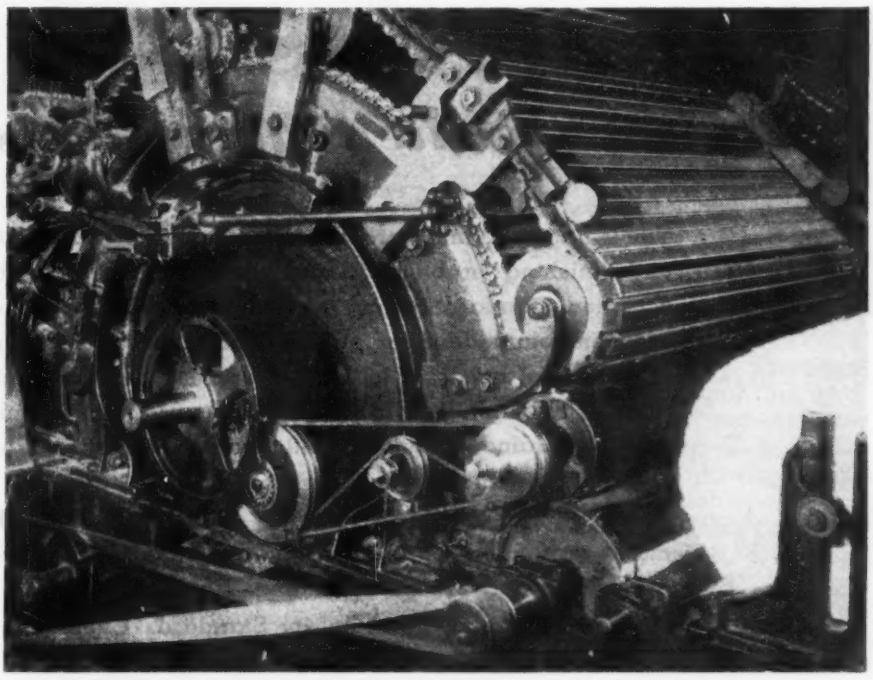


Fig. 1. Some mills have equipped cards with oilless bearings and bushings to decrease wear and to permit close settings.

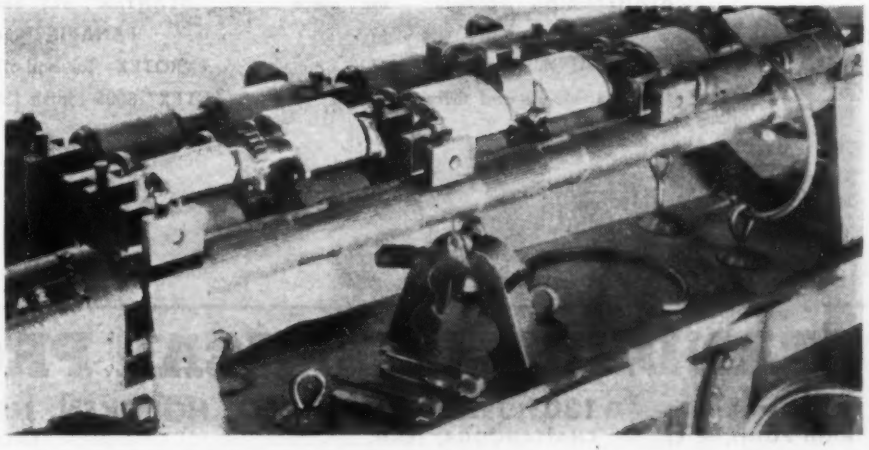


Fig. 2. Spinning and roving cap-bar nebs of oilless materials are used by many mills.

STANTEX OILS

meet specific requirements!

You'll find a Stantex product to meet every processing, dyeing and finishing problem. Standard Chemical Products are an accepted standard among textile manufacturers, because they are compounded under strictest laboratory control, geared to meet special needs of individual processors. Many mill owners regard ours as *their* laboratory, because our technicians are specially trained to widen bottlenecks . . . to disentangle snarls confronting textile production programs.

Yes, Standard Chemical Products' staff is ready at all times to assist you with sound, friendly advice based on actual mill experience and intensive training.

For full details, call in a Standard Chemical Products' representative.

"STANTEX" Coning Oils
STANTEOSINE Softener — for piece goods finishing
"STANDAPOL" and "STANTEX"—finishing, sizing and throwing oils
"LANAFIN" Size No. 72 (water soluble)
"STANTEX" 629 Static Inhibitor
"LANAFIN" Soaps and Oils
PYROTEX—for boil-off and dyeing
"STANTEX" 3005 Finish (Staple Fibers)

S. CPI INC. REG. U.S. PAT. OFF.

STANDARD CHEMICAL PRODUCTS, Inc.

PROVIDENCE, R. I. — HIGH POINT, N. C. — **1301 JEFFERSON STREET, HOBOKEN, NEW JERSEY** — CHATTANOOGA, TENN. — SACRAMENTO, CAL. — PATERSON, N. J.

Carded-Yarn Mills Use IMPROVED DRAWING

HIGHLIGHTS: *Organizations for medium carded yarns favor long-draft roving and spinning—Bi-coil and Controlled-draft drawing step up production and decrease doublings—Typical organizations illustrate drawing practices determined by quality and technical requirements.*

By C. MALLARD BOWDEN, *Southern Editor, TEXTILE WORLD*

MILL ORGANIZATIONS* for medium carded yarns favor large packages and long draft at the roving processes and more production, fewer doublings, and maintained quality at the drawing processes. Among the first in the industry to install long-draft roving and spinning, medium carded-yarn mills are expected to hold these advantages and to improve further the preparation of drawing sliver. Since present operation of improved drawing equipment indicates that sliver quality is maintained despite the increases in production and decreases in doublings, the mills which have installed Bi-coil or Controlled-draft drawing believe that they are in a satisfactory position.

Bi-coil drawing effects production increases and floor-space savings because of the extra delivery in each can. It also preserves the traditional drawing ratio of one unit of draft for each unit of doubling and cuts in half the time for handling cans at subsequent creeling operations. Controlled-draft drawing produces good quality in carded and combed mills; and with an auxiliary process at the lap-winder, it makes possible a maximum draft for reducing the weight of the card sliver. More often it is used at medium drafts in high-quality mills which desire drawings evenness without the 6x6 or 8x8 doublings obtained from conventional drawing. Complete data is given in Table VIII.

Medium long draft characterizes the roving drafts used in most of the organizations discussed. The machines or systems used may be of the higher drafting range, and for this reason the drafts prescribed do not necessarily equal the potential draft of the particular system used. (For maximum and common drafts see Table I of the first article in this series, TEXTILE WORLD, July issue). J-3, Superdraft, and Five-Roll are employed in many mills because they increase the potential draft range of the mill as a whole, and a combination of high-draft and medium-draft systems is not uncommon.

SHEETING. Fabrics in the range discussed are listed in Table IV of the second article in this series (TEXTILE WORLD, August issue). Sheetings, towels, flannels, drills, and tire cord are selected for typical yarn-organization studies because they illustrate the use of long-draft and drawing equipment. The difference in quality demands of the different fabrics accounts for the varying layouts of drafts, doublings, and equipment.

An important use for the yarns in the medium-carded range is sheeting. There are many qualities of sheeting, and one of the more economical types is manufactured to the yarn specifications shown in Table IX. The cotton is from 1 to 1 1/32 in., and the yarn numbers are 21s warp (4.20 x square root) and 22s filling (3.40 x square root). The roving is 1.55 hank produced on a single-process roving frame equipped with long draft, and is creeled single in the spinning frame. The roving draft of 11.07 balances well with the 14.46 spinning draft; and the drawing may be two-process, Bi-coil, or Controlled-draft, although the latter is used in this particular organization.

Attractive from the standpoint of economy, this layout has definite advantages and maintains quality in a highly competitive field. Conservative drafts are maintained throughout the organization. Adaptability is also pres-

This is the third installment of a series. For first article, see issue for July, 1945; for second, August, 1945.

Table VIII. Data on the improved drawing systems are given below.

	Doubling	Draft		Size	
		Range	Common	Range (Gr.)	Common (Gr.)
Lap Winder	16		1.04	676–954	831
5-roll Controlled draft	1	16–20	16.00	40–66	54
Bi-coil	4		4.00	40–75	60
4-roll regular	6–8	4–8	6.00	40–75	60

Table IX. An economical organization for sheeting yarns.

Process	Factors		Doublings	Calculation	Counts
Spinning	% Contr.	6.30	1	93.70|21.00	21.00 Warp
	Draft	14.93		14.46|22.41	4.20 x sq. rt.
Interdraft	Draft	11.07	1	11.07| 1.55	1.55 h.r.
Controlled — draft drawing				.14 60	60 gr.
	Draft	13.00	1	x 13	
Lap winder			16	16|780 gr.	
	Draft	1.04		49 gr. x 1.04	49 gr.
Card				51 gr.	51 gr.
	Draft	110		x 110	
	Waste	5%		.95| 5610	
				437.5 | 5905	
One-process picker				13.5 oz.	13.5 oz. lap
Spinning	% Contr.	4.25	1	95.75|22.00	22.00 Filling
	Draft	15.27		14.77|22.90	3.40 x sq. rt.
Interdraft	(Same sliver as warp)			1.55	

TIMES ARE CHANGING *Fast*

MANY things, including some outstanding post-war packages, have been outmoded by recent improvements in materials and methods.

If your packaging has not been re-examined since Pearl Harbor, let OLD DOMINION'S engineering and creative staffs make recommendations to modernize and revitalize it.

Fine Boxes for Fine Products

Call On

OLD DOMINION BOX COMPANY

CHARLOTTE, NORTH CAROLINA

PLANTS IN TEN SOUTHERN CITIES

Folding Cartons • Set-Up Boxes • Convolute • Spiral Wound and Corrugated Containers

"THE SOUTHERN BOXMAKER WITH A NATIONAL REPUTATION"

New York Representatives, BAKER PRESS 228 East 45th St., New York 17, N. Y., Murray Hill 2-6492

ent, and it is doubtful that the organization could be improved. Since the problem is one of balancing quality and economy, the mill might employ a higher draft and double the roving at the spinning frame. An increase in draft at all processes from cards through spinning would probably be necessary to effect the change to double roving; and these increases, while possible, would depend upon local mill conditions. They are mentioned only to illustrate the adaptability of the organization to higher draft when proper equipment and stock conditions permit.

TOWELS AND FLANNELS. The organization for huck-towel yarns shown in Table X is somewhat below the quality of the sheeting organization. Here the layout problem is to find the amount of draft best suited to the staple. The staple is $\frac{7}{8}$ to $1\frac{1}{8}$ in., and the grade is such that considerable opening equipment is required to clean the cotton. The stock loses 6% in waste at the card, and yet the organization is as advantageous as conditions permit. The spinning draft of 16.04 may be high for the staple, but the 18.24 t.p.i. should improve the running. Large packages from the 11x5½ roving frame and extra sliver delivery from Bi-coil drawing improve the production.

Flannel twills usually require the combination of medium-fine warp yarns and coarse, soft-twisted filling yarns. The organization shown in Fig. 3 includes only the 25s warp (4.50 x square root), since the 7s filling is under the range of yarns discussed. The use of long-draft roving combined with Bi-coil drawing is noteworthy. A draft of 16.95 is obtained at the roving frame with the use of one of the higher-drafting systems. The roving is sent direct to the spinning, where it is double-creeled for a spinning draft of 18.07.

Tire cords usually require two processes of roving because of the high quality demanded. The organization shown in Table XII contains only one process of roving for 14.00s (3.20 x square root), made from $1\frac{1}{16}$-in. cotton. A draft of 13.23 at the Controlled-draft drawing is an important asset in the production of 52 grain sliver of sufficient quality for the roving frame. The 13.75 draft at the roving frame produces 2.20 hank roving which is doubled in spinning. The spinning draft of 13.20 is moderate and should provide good running conditions.

The organization shown in Table XIII is used in the manufacture of warp and filling for drills. The numbers are 17.00s warp (4.50 x square root) and 16.00s filling (3.30 x square root). Bi-coil drawing is used in this layout. The cotton is 1 to $1\frac{1}{32}$ in., and the drafts of 8.60 and 15.36 at the roving and spinning frames respectively are conservative.

Table X. This organization for huck-towel yarns illustrates the use of long draft for lower grades of cotton.

Process	Factors	Doublings	Calculation	Counts
Spinning	Contr. 7.75% Draft 16.04	1	92.25|14.80 16.04|16.04	14.80 Warp 4.75 x sq. rt.
Long-draft Slubber 11 x 5½	Draft 7.14	1	7.14| 1.00	1.00 h.r.
Bi-coil Drawing	Fin. Draft 4 Brkg. Draft 4	 4 4	.14 4|60 15 x 4 4|60 15 x 4	60 gr.
Card	Draft 100 Waste 6%		60 100 .94| 6000 437.5 | 6383	60 gr.
One-process picker			14.6 oz.	14.6 oz. lap
Spinning	% Contr. 5.20		94.80|11.00 11.60|11.60	11.00 Filling 3.80 x sq. rt.
Long-draft Slubber	(Roving and sliver same as warp)		1.00	1.00 h.r.

Table XI. In making this flannel-twill yarn, the mill obtains considerable draft from its equipment.

Process	Factors	Doublings	Calculation	Counts
Spinning	% Contr. 7.75	2	92.25|26.00 18.07|27.10 1.50 x 2	25.00 Warp 4.50 x sq. rt.
Superdraft J-3 Five-Roll	Draft 16.95	1	16.95| 3.00 .177 hank	3.00 hank
Bi-coil drawing	Fin. Draft 4 Brkr. Draft 4	 4 4	47 gr. 4 4|188 47 4 4|188	47 gr.
Card	Draft 115 Waste 5		47 gr. x 115 .95| 5405 437.5 | 5689	47 gr.
One-process picker			13 oz.	13 oz. lap

Table XII. Tire cords require quality and economy from the machine layout.

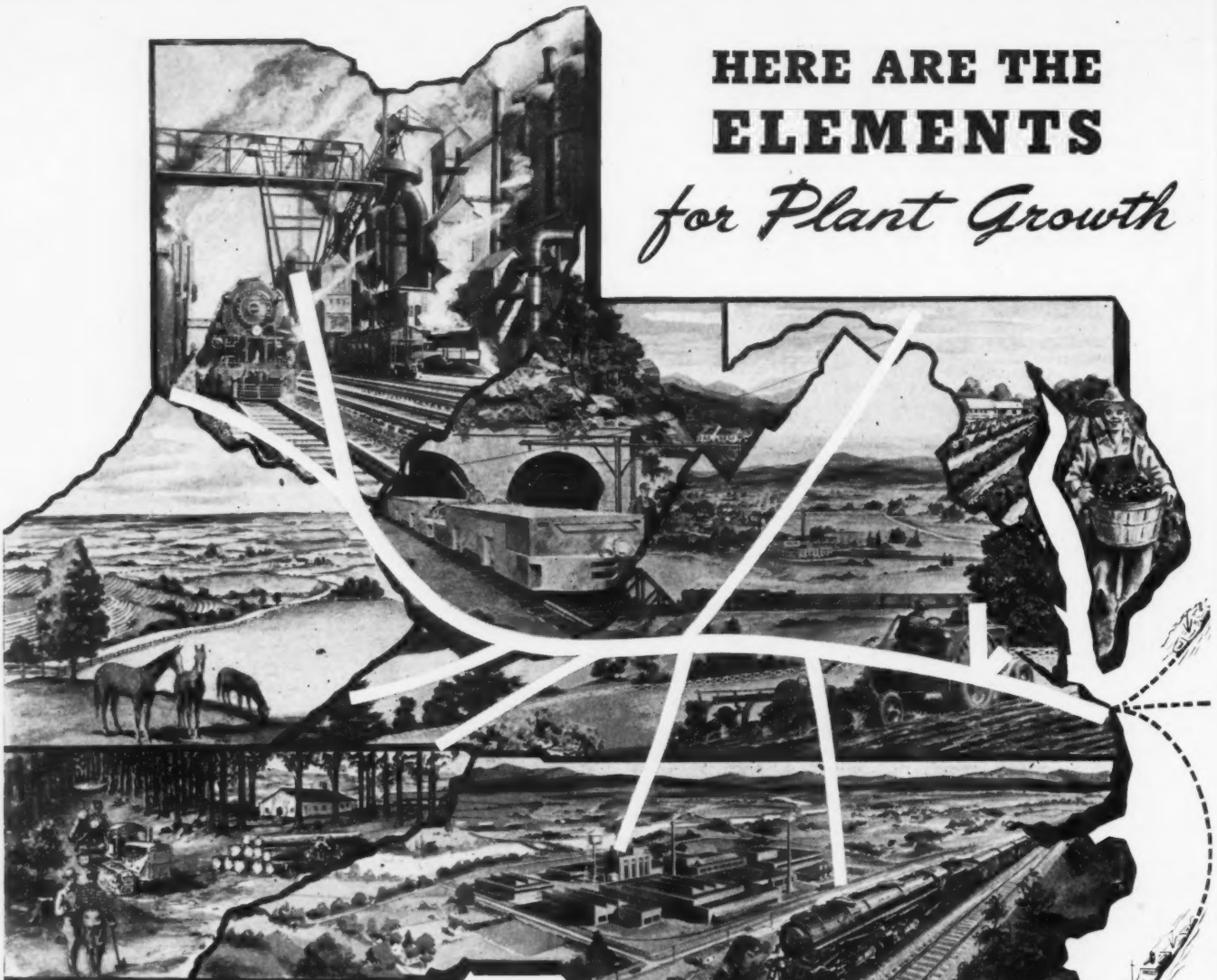
Process	Factors	Doublings	Calculation	Counts
Spinning	% Contr. 3.65 Draft 13.21	2	96.35|14 13.21|14.53 1.10 x 2	14.00 Tire Cord 3.20 x sq. rt.
Interdraft J-3 Five-Roll	Draft 13.75	1	13.75|2.20	220 h. r.
Controlled — draft drawing	 Draft 13.23	 	.16 hank 52 gr. x 13.23	 52 gr.
Lap winder		16	16|688 gr. 43 gr. x 1.04	 43 gr.
	Draft 1.04			
Card	Draft 115 Waste 5%		45 gr. x 115 .95| 5175 437.5 | 5447	45 gr.
One-process picker			12.5 oz.	12.5 oz. lap

Table XIII. Bi-coil drawing and conservative drafts are used in this organization for drill yarns.

Process	Factors	Doublings	Calculation	Counts
Spinning	% Contr. 7.75 Draft 15.36	1	92.25|17.00 15.36|18.43	17.00 Warp
Long-draft slubber	Draft 8.60	1	8.60| 1.20	1.20 h.r.
Bi-coil Drawing	Fin. Draft 4 Brkr. Draft 4	 4 4	14 hank 60 gr. x 4 4|240 60 x 4 4|240	 60 gr. sl.
Card	Draft 100 Waste 5%		60 gr. 100 .95 | 600 437.5 | 6316	60 gr. sl.
One-process picker			14.5 oz.	14.5 oz.lap
Spinning	% Contr. 3.90		96.10|16.00 13.81|16.65	16.00 Filling 3.30 x sq. rt.

Roving and sliver same as warp.

HERE ARE THE ELEMENTS *for Plant Growth*



Industrialists foresee increased competition as a natural condition of postwar readjustment and expansion. This is one reason why plant location or relocation must be considered with greater emphasis on the relationship of site to the elements which are necessary to successful production.

Elements that give vitality to the textile industry are abundantly present in the territory directly served by the Norfolk and Western—unlimited raw materials and supplies, plenty of power from bituminous coal, water in ample volume, a tax structure friendly to industry, intelligent, skilled and unskilled native labor, excellent plant sites, pleasant climate, and plenty of room to grow.

Accessibility of these elements so essential to expansion is assured by the Norfolk and Western's Precision Transportation in Virginia, West Virginia, Ohio, North Carolina, and portions of Maryland and Kentucky. Moreover, N. & W. rails connect the Midwest with the year-round, ice-free Port of Norfolk, Va., and link the North with the South, providing vital outlets to both home and world markets.

Ask our specialists of the Industrial and Agricultural Department at Roanoke, Va., for specific data on any section served by the N. & W. They will tell you how this territory is peculiarly possessed of the elements vital to the operation and growth of textile plants.

Norfolk and Western RAILWAY

FOR BETTER PLANT LOCATIONS

WORSTED KNIT CLOTH
Needs Dimensional Stability

HIGHLIGHTS: *Shrinkage in worsted jersey is due to fulling characteristic of wool and to relaxation of the knitted loops—Cutters are bothered most by the latter—Means to avoid this include Redmanizing—Other proofing finishes may enhance jersey.*

WORSTED JERSEY CLOTH is a desirable item for the cutting trade because of the variety of women's garments that may be made therefrom. Dresses and suits, both formal and sports, are being fashioned from it to retail at prices usually lower than a similar garment made from a woven worsted cloth of comparable wool grade and weight.

A number of mills which turn out staple jersey fabric on circular machines have been increasing their machine capacity during the war years and are expanding their customers accordingly. A greatly increased yardage of flat knit fabrics due to improvements in tricot machines will soon be available to the cutting trade, although these are usually of rayon rather than worsted.

Mill agents have found that cutters who are inexperienced in cutting knitted fabrics often get an unnecessary prejudice against these fabrics because they make no allowance for their peculiarities and handle them just as they handle woven fabrics. The prime difficulty comes in a relaxation shrinkage which takes place gradually over perhaps 24 hours after the cloth is unrolled on the cutting tables. If the knitted cloth is laid and cut on the same day, this shrinkage takes place after the various pieces of the garment have been cut. These pieces therefore no longer conform to the size and shape of the pattern, and the resulting garment is crude and misshapen as a result.

The shrinkage due to the fulling tendency of wool does not immediately enter this picture; the shrinkage on the cutter's tables is principally the relaxation of the knitted loops following the strains put upon them during knitting, finishing, and rolling for shipment. Thus, the various chemical treatments to eliminate felting shrinkage of wool goods, successful though they may be, do not directly aid the cutter of jersey fabric who sees fit to rush the goods through his cutting room.

Actually the first step for the cutter who is handling knitted goods is to let the material rest on his cutting tables at least overnight and preferably for 24 hours. None of the technicians consulted could state accurately how much of the incipient shrinkage will be dissipated within that time, but in practice it is enough to make the cut portions of the garment remain sufficiently true to the pattern to allow proper assemblage but it is by no means all the relaxation shrinkage. Actually there would be more satisfaction to garment maker and user if this residual relaxation shrinkage could be completely removed.

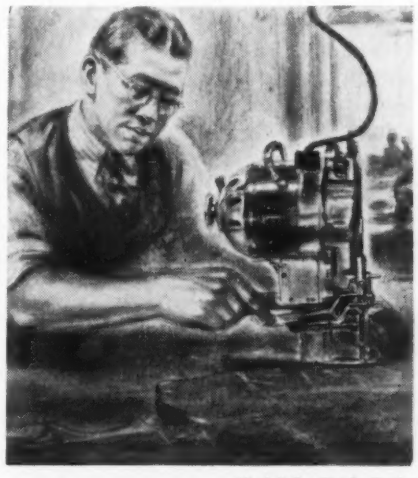
Various finishes might be applied and doubtless will be applied in this active postwar era, which will greatly improve jersey fabrics in service. Shrink-proof finishes will be sought to assure dimensional stability when garments are wet or dry cleaned. Mothproofing will protect the fabric against a very common form of domestic damage. Water-repellent finishes will be used to some degree to enhance the service of sports wear and give an added sales point. Crease-resistance will be applied to spun-rayon blends to give them the resilience and recovery of the best-grade wool. All of these finishes may influence wider use of knit cloth, but some education must be undertaken if all cutters are to get the best out of the material.

To alleviate the cutters' trouble with relaxation shrinkage, there will soon be available an adapted form of the Redman "normalizing" process which has successfully been applied to cotton knit-underwear fabrics. Redmanizing, or a similar shrinking process, should remove virtually all the relaxation shrinkage from jersey cloth and so make it possible on the cutter to waste no time in his cutting room. He will be assured pieces of fabric which conform as perfectly as possible to his patterns, so that the garment assembly will be accurate and come to the shape as designed.

Relaxation shrinkage obtained on Redmanizing wool sub-knit fabrics

100% wool .....about 10%
Blend ½ wool and ½ cotton.....8½%

This is merely "normalizing" the fabric. In the tests which resulted in the above figures the chance for felting shrinkage was carefully guarded against. Shrinkage is on the length.



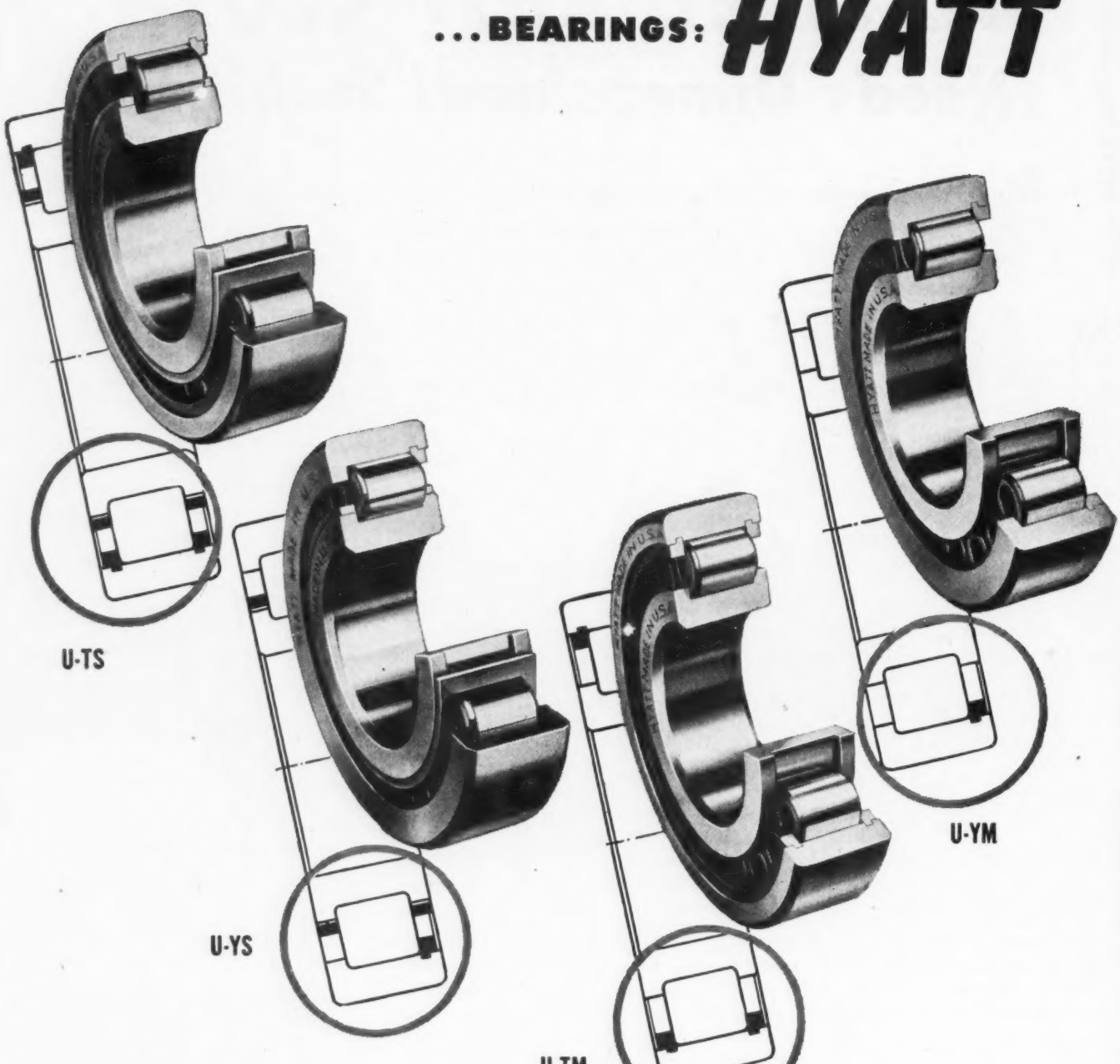
Sketch by Freda Reiter

Relaxation of worsted jersey on the cutting table gives trouble to some garment makers.

In Flexibility of Design

NON-SEPARABLE TYPES HAVE THEIR PLACE, TOO

...BEARINGS: HYATT



In addition to the range of Hyatt Hy-Load Roller Bearings of the separable type there is a complementary series of non-separable bearings for assembly as a complete unit.

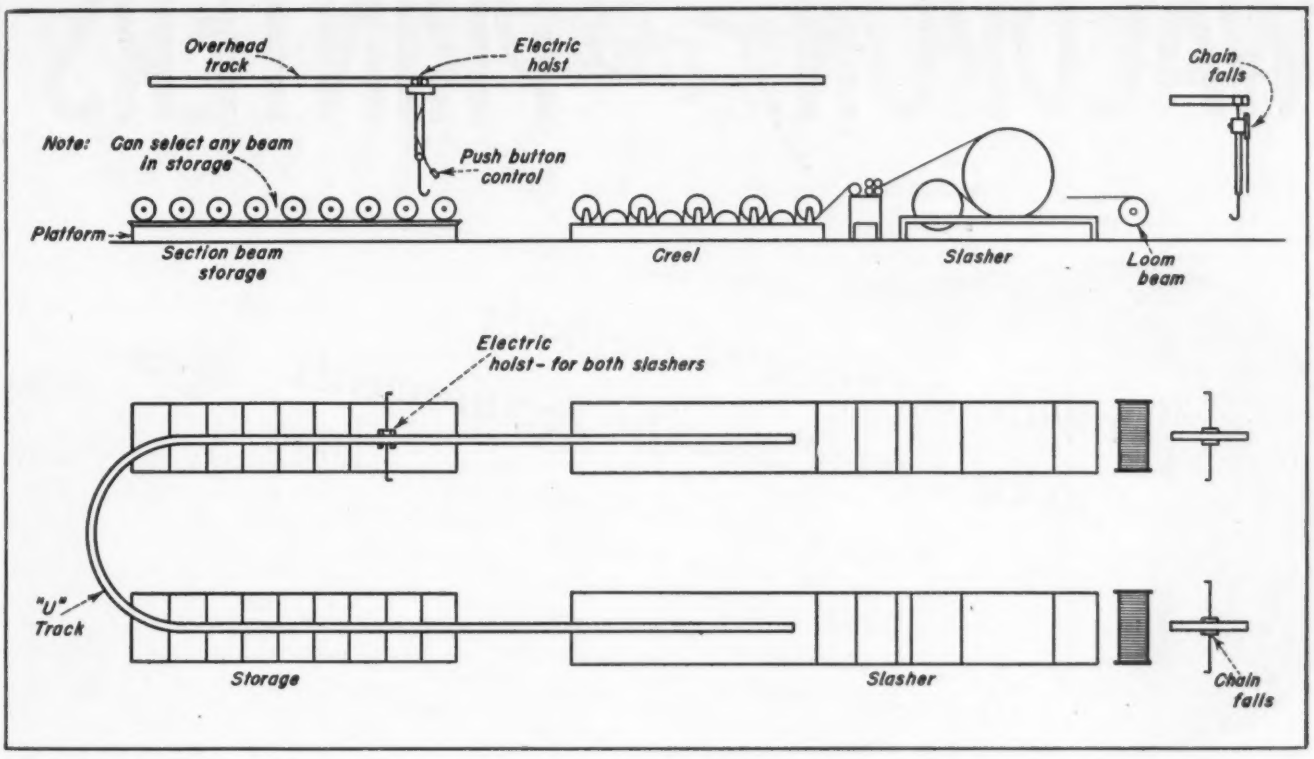
These bearings as illustrated are the U-TS, U-YS, U-TM and U-YM. The first two are built with a roller separator and the latter two a full complement of rollers.

Thus no matter what type of radial roller bearing your design calls for there is a Hyatt Roller Bearing to meet your required specifications. Into each is built high load capacity with precision.

Let us give you any further details you may wish or send you a copy of the Hyatt Hy-Load Bearing Bulletin.

HYATT BEARINGS DIVISION · GENERAL MOTORS CORPORATION

Harrison, New Jersey · Chicago · Detroit · Pittsburgh · Oakland, California



Relative location of electric hoist, section-beam storage, and slasher, of the mechanical-handling system which permits two men to change a ten-beam set in about 15 min.

MECHANICAL HANDLING of Loom Beams at Nashua

HIGHLIGHTS: *One electric hoist supplies section beams to creel sections of two different slashers—Small chain fall assists in removal of loom beams.*

By BENJAMIN THOMAS, JR.
Nashua Mfg. Co.

MECHANICAL HANDLING of section beams and loom beams has eliminated practically all heavy lifting by slasher tenders in the cotton-division room at the Nashua Mfg. Co., Nashua, N. H. Since the installation of a materials-handling system the work of the tenders has been lightened to such an extent that it is possible, if desired, to have all the work handled by a male tender and a female assistant.

MECHANICAL-HANDLING SYSTEM. The section beams are normally stored on a raised rack or platform at the rear of each slasher. A U-shaped overhead track runs above the creel section and the storage section of each two slashers, as illustrated, so the overhead hoist may be used for handling beams from the two slashers. This hoist is of the latest type with push-button control for raising and lowering the load. The hoist has been tested for loads of 1,066 lb., but under normal conditions it is not called on to handle section beams of a gross weight of much greater than 850 lb. These beams have a 30-in. head and are wound on Barber-Colman high-speed warpers.

Recreeling operations are simple. It is necessary for the slasher tender only to run the electric hoist over the section beam in the storage space that is to be moved to the slasher creel and then to attach the two end hooks on the bar carried by the hoist to the gudgeons of the beam.

By push-button control, the hoist lifts the beam and carries it to the correct position over the slasher creel. Again by push-button control, the beam is lowered into place.

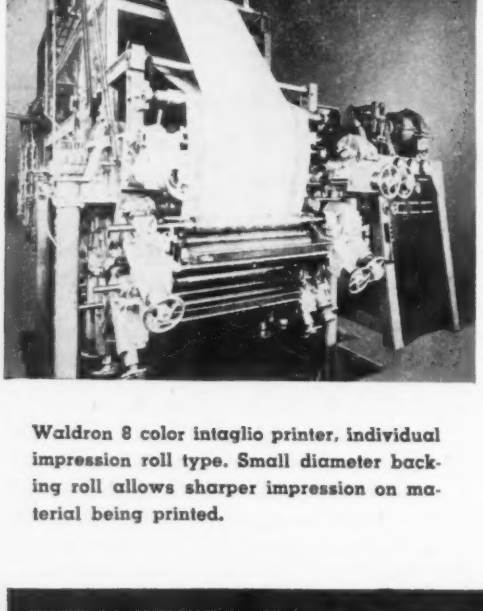
Two men working together and using this system can change a ten-beam set in about 15 min. This time does not, of course, include the time spent in threading the yarn and in tieing it onto the last warp. A small hand-operated chain fall is located at the front of each slasher to facilitate the removal of the slashed loom beams.

USE OF FEMALE SLASHER TENDERS. While Nashua is not using female slasher tenders, the materials-handling system installed is of such a nature that they may be employed along with a male tender. Only a few changes are required. For example, it would be advisable to have the chain fall at the front of the slasher electrically operated so as to prevent women from having to do heavier work.

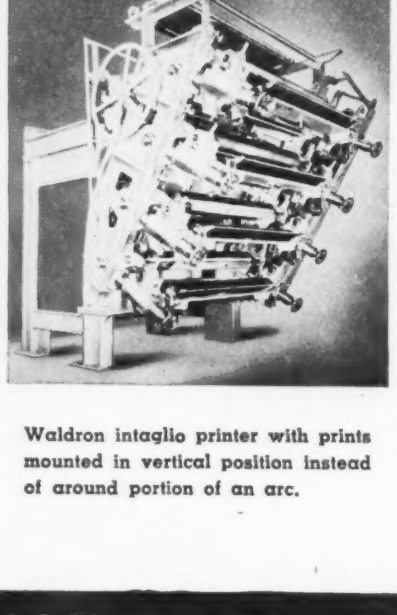
WALDRON *Textile* PRINTERS

Provide a choice of methods to best meet specific requirements

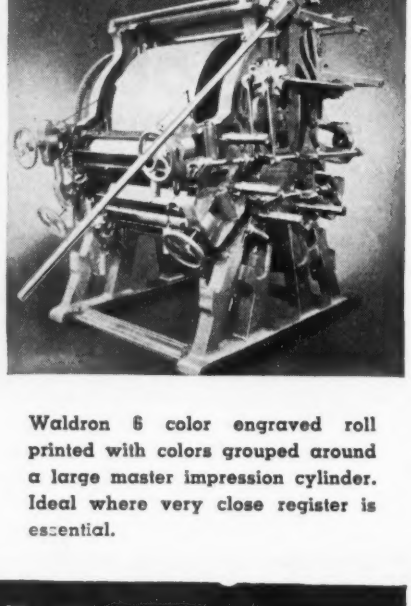
Intaglio or engraved roll; prints mounted vertically or around an arc; one color or eight—there's a modern WALDRON Printer for your job. Each WALDRON machine is engineered to meet the most exacting requirements in impression, register and speed as their performance records prove. Our Technical Advisory Service is available to you.



Waldron 8 color intaglio printer, individual impression roll type. Small diameter backing roll allows sharper impression on material being printed.



Waldron intaglio printer with prints mounted in vertical position instead of around portion of an arc.



Waldron 6 color engraved roll printed with colors grouped around a large master impression cylinder. Ideal where very close register is essential.

JOHN WALDRON CORP.

Main Office & Works – NEW BRUNSWICK, NEW JERSEY

CHICAGO - 6
201 N. WELLS ST.

NEW YORK - 17
350 MADISON AVE.

BOSTON - 9
79 MILK ST.

BUILDERS OF QUALITY MACHINES SINCE 1827

Georgia Mill Men Discuss SPINNING PROBLEMS

HIGHLIGHTS: *Spinning practices are more standardized than carding practices—Automatic quillers are not widely used—Lighter travelers and standard speed favored for breaking in new rings—Most mills clean frames with compressed air.*

SPINNING PRACTICES followed in Georgia mills were revealed by the Textile Operating Executives of Georgia in their answers to eleven questions on spinning in the 1945 spring "Meeting-By-Mail." Twenty-six mills, representing more than 1,500,000 spindles, participated in the meeting. A summary of the answers to eleven questions on carding appeared in TEXTILE WORLD, August, 1945, issue.

Question No. 12, the first question relating to spinning, asked for the mills' experience and opinions on the use of automatic quillers or filling rewinding machines. Only two mills reported any experience with automatic quillers. Mill No. 17 recently installed a Whitin-Schweiter automatic filling winder for experimental purposes; while Mill No. 19 has found that it derives some advantages from the use of a quiller when rewinding plied yarns, in which case they are able to put about 20% more yarn on a quill. Mill No. 4 stated that it intends to buy an automatic quiller for experimental purposes.

Question No. 13 asked whether there is a practical method other than by hand for picking top rolls. Of 21 mills answering, 20 pick their top rolls by hand. Most of them reported that they have experimented with mechanical pickers, but discarded them as unsatisfactory. Mill No. 22 said that it uses a mechanical roll picker driven by air, and cleans its top rolls once a day.

Mill No. 4 stated, "We have placed these cleaners at the disposal of our spinners and have given them the option of using these devices or the hand method. They invariably come back to the hand method." Mill No. 14 found that mechanical pickers are too slow and do not clean thoroughly.

Of 19 mills which volunteered information regarding the use of the pickers for cleaning steel rolls, 12 prefer cleaning by hand and 7 use mechanical pickers.

In answer to question No. 14, which asked for experience with synthetic top rolls and aprons on spinning, 11 mills reported that they find synthetic rolls satisfactory. Mill No. 7 stated that when using synthetic top rolls in processing long-staple cotton, there is a tendency toward excessive eyebrowing. Consequently, it favors leather rolls to synthetic rolls. Five mills are experimenting with the rolls and one of them, No. 25, has found that the rolls flute when standing over the week end and that they eyebrow.

Five mills reported the use of synthetic aprons, three of them finding them satisfactory and two unsatisfactory. Nine mills are experimenting with synthetic aprons.

Question No. 15 asked for experience with air-changing humidification. This system is now being used by seven of the mills reporting. Mills No. 1, 4, and 21 find the system satisfactory. Mill No. 9 stated that the air-changing system reduced the temperature of the spinning room from 6° to 10° F.; while Mill No. 16 finds that its room temperature is reduced from 8° to 10° F. Mill No. 12, using large exhaust fans, gets a change of air every three minutes. The fans enable it to maintain a relative humidity of about 65% and a temperature about 4° to 6° F. above the outside temperature at the time.

Question No. 16 related to the type of spindle, clutch or acorn, the mills prefer. Six indicated a preference for the clutch and six for the acorn spindle, while three mills use both. Mills No. 8 and 21 prefer the clutch spindle for filling and the acorn spindle for warp. Mill No. 14 reported that it has not used the clutch spindle on warp yarn, but that for coarse filling it has found it very satisfactory. For fine filling it prefers the acorn spindle.

In regard to wooden-core spindles with paper tubes, Mill No. 1 said, "We have adopted as standard the wooden-core tubes and will use nothing else on ring diameters 2½ in. and larger." Mill No. 5 has found the wooden-core spindles best for large packages running at high speed.

The replies to Question No. 17 revealed that 20 out of 21 mills answering use non-fluid oil for top rolls. Mill No. 22 prefers a light fluid oil. Seven mills prefer saddles without wicks, while 13 think it is best not to remove

(*Continued on page 224*)

The best method for cleaning spinning frames, based on answers given by Textile Operating Executives of Georgia for their "Meeting-By-Mail"

Mills using air	3*		5		8	10	11	12	13	14		16	18	20	22		24		26
Mills cleaning manually		4		7							15					23		25	
No. frames stopped	3	....	All	....	All	6	.....	All	None	3	....	None	None	None	4	....	4	....	All
Air pressure (lb.)	35	....	90	....	.....	100	30	75	55	80	....	.....	85	60	.....	....	85	....	60
Size nozzle (in.)	.....	....	1/8	....	.....	1/8	1/4	1/4	3/32	1/8	....	.....	3/16	1/8	.....	....	1/8	....	1/8
Frequency (hr.)	24	....	1**	....	24	24	8	1†	8	1†	....	8	8	2	24	....	24	....	1†

*Number refers to the mill identified by this number in the text. **Month. †Week.

HER TIME WILL PAY FOR IT...

TESTS PROVE EFFICIENCY

The Blackness Test was developed to furnish a more precise measurement of Precipitron's greater efficiency compared to mechanical filters. It provides greater accuracy and approximates actual particle count.

The results of a typical test, shown here, indicate clearly what Precipitron can do. Here are actual photographs of a test ... where 2,500 cubic feet of air in each instance, was drawn through a cloth area for a 60 minute period. They tell a graphic story.

Uncleaned Air

Mechanically Cleaned Air

Precipitron Cleaned Air

Five hours per month spent on cleaning each loom, plus the usual six yards of waste stock that these operations entail, soon will pay the cost of Precipitron*, the best answer science has been able to devise to keep mill air clean.

A rayon-cotton mill operating 1,600 looms, 620 hours per month, increased its production by 42,600 yards a month and eliminated 33,120 cleaning operations a month—by installing Precipitron.

Precipitron will pay for itself in *your* mill where dirt on guides, guide wires, flyer wires and rollers results in a considerable percentage of off-quality in your winter production.

Precipitron eliminates smoke, dust, soot and (by recirculating the air) the oil mist that is generated within the room. It arrests air-borne particles, as small as 1/250,000 of an inch. It delivers air 90% clean by actual blackness or discoloration test.

Consider the effect Precipitron will have on your production, your product, your employees. Consider its advantages to you in post-war competition.

For the complete story on Precipitron, call your nearest Westinghouse office, or write Westinghouse, P.O. Box 868, Pittsburgh 30, Pa.

Westinghouse PRECIPITRON

PLANTS IN 25 CITIES ... OFFICES EVERYWHERE

*Trademark registered in U. S. A.

J-04515

Movies Employed to Trace WORSTED-YARN DEFECTS

HIGHLIGHTS: *Top with nep count of over 75 per 5-yd. length suited only for low counts and piece-dyes—Special clearer rolls help eliminate fly from front rolls.*

By F. E. CLEYN
President, Spinners Limited

ANALYSIS OF MANY of the faults commonly found in worsted-spun yarns is now being checked by means of high-speed motion-picture equipment at the mills of Spinners Limited. Recently a study was made of such defects as are caused by slubs, fly, and neps in worsted yarn and also the blending of tops dyed in different colors at the gill boxes and the heavy drawing boxes.

A motion-picture camera was set up at the gill boxes and also at the heavy-drawing boxes and pictures were taken of stock passing through under various conditions. The camera was set to operate at a speed of about 64 frames per second. Different ends of colored top as well as ends of tops of several qualities of wool were run. The reactions of these various blends of wool, with and without the carriers, were filmed. Kodachrome film was used throughout the test runs to show the different reactions in respect to blending and fiber control of the various wools. In all, about eight rolls of film were used in the study of fiber control at the gill and drawing boxes.

SLUBS. One of the most common, as well as one of the most misnamed, faults or defects in yarn is the *slub*. The cause of faulty yarn may be from some other reason, but it is still referred to as slubby. Weavers and finishers often complain about yarn to the spinner and if they don't use the word "bad," they will most likely call it slubby which, in their minds, covers a wide variety of yarn flaws.

Slubs are generally caused either by mechanical means or by mistakes made by the operator in charge of the processing of the top or yarn. Some of the common causes that are the result of mechanical errors are bad aprons, poor rollers, and uneven tension. Such causes are quite common and will not be discussed because the remedy for them is apparent.

CARRIER SLUBS IN DRAWING. The carriers at the drawing box can, if not properly used, cause slubs. Uncontrolled short fibers will be picked up by the front carrier, with the possibility that the resulting fiber accumulation will be picked up by the sliver and produce a slub. This type of slub is easily detected because it looks like a knot. Such slubs are shown in Fig. 1.

Films taken of the drawing process showed the formation of slubs by the carrier picking up stray ends of fiber. Where low twist was used the fuzzy sliver produced much fiber accumulation on the carrier. However addition of too much twist to control the stray fibers only added to the drafting difficulty.

(Continued on page 226)

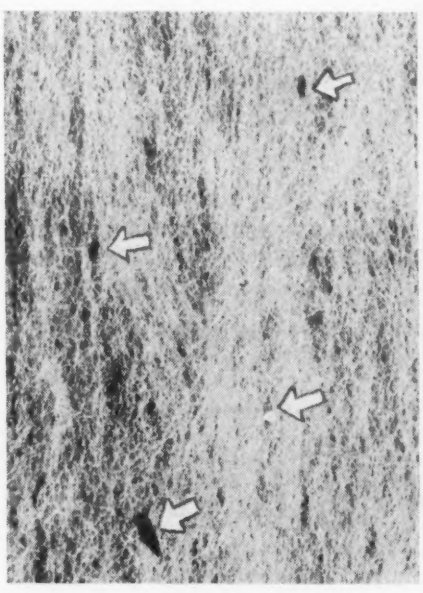


Fig. 1. The top has been opened up to show the carrier slubs in the top caused by uncontrolled fibers lapping about the front carrier.

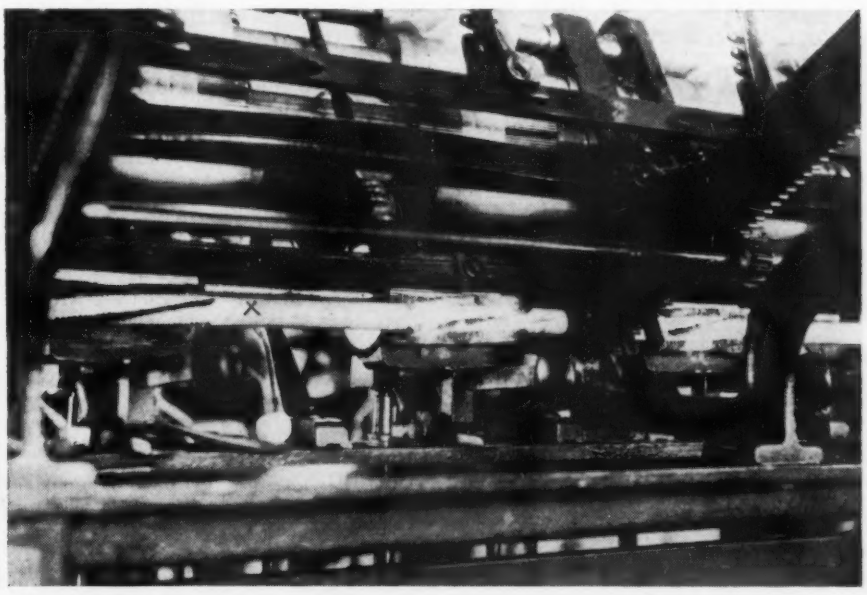


Fig. 2. A special cleaning roll, indicated by the cross, has been added to the frame to assist the cleaning pads in removing waste accumulations from the front rolls in drawing. A considerable amount of waste is shown on the cleaners.

You're in good company . . .

in *Southern New England*

SARGENT · CHENEY · Underwood · Williams' · STANLEY · ARROW SHIRTS SANFORIZED · ARMSTRONG TIRES · POND'S · WINCHESTER · ROYAL · ARALAC · RUSSWIN · ERECTOR · UNIVERSAL · International Sterling · COLT · ELECTRIC BOAT COMPANY · Fuller · ILEX · THERMOS

No matter where you go in industrial Southern New England, it won't be long before you come upon the plant of a well-known manufacturer.

For example, in this section of Connecticut, nationally-famous typewriters, locks, firearms, silverware, brushes, tools, safety razors, rugs, vacuum bottles, aviation engines and propellers, rubber goods, shaving cream, soap and skin lotion, as well as many other products, are manufactured.

Every one of these products has a name as familiar as your own. Many of them had their beginnings here. Others have come because of conditions favorable to manufacturing . . . generations of skilled craftsmen; abundant power; fair taxes; industrially-minded banking; State and local government that grew up with industry and understands its problems.

But that is only part of the story.

Southern New England lies in the heart of the world's richest, most-highly concentrated market.

Within a radius of 500 miles live 58,000,000 people to absorb not only Southern New England's consumers' goods but her producers' commodities —the tools and parts that go into other industries.

And because no part of Southern New England is more than 125 miles from tidewater and the great ports leading to foreign markets, manufacturers locating here will be at the threshold of the huge overseas trade that will develop during the great era of peacetime commerce ahead.

Southern New England offers better personal living, too, for it abounds in charming residential communities with good schools, churches, lakes, hills and sandy beaches—all close by.

In planning your tomorrow, don't overlook Southern New England—perfect for your new or expanding business . . . and for your all-around enjoyment of life.

An industrial booklet in full color, "Southern New England for Tomorrow's Industry", is yours for the asking. Write to P. E. Benjamin, Manager of Industrial Development, The New Haven Railroad, 80 Federal Street, Boston 10, Mass.

This is one of a series of advertisements presenting the industrial advantages of Southern New England.

THE NEW HAVEN R.R.

Serving **SOUTHERN NEW ENGLAND** *with a network of rail and highway transportation that puts every manufacturer* "ON THE MAIN LINE".

RECONVERSION

Thrust on Industry Suddenly Lights Way to Free Economy

(*Continued from page 116*)

wool and rayon during the fourth quarter of this year, but that it will be the first quarter of 1946 before there is a buyer's market in cotton. On the other hand, OPA officials disagree completely with WPB's forecasts. They believe that textiles and many clothing items will be in short supply for some time and therefore that controls should be retained in order to prevent sharp increases in prices. OPA will make revisions in MAP as they are needed, but the agency will retain the order.

OPA will continue to operate under its present authorization until June 30, 1946, at which time it will be up to Congress to decide whether there is any further need for the agency. WPB officials expect that their board will be dissolved long before next June and that whatever functions must be continued through the reconversion period will be transferred to the Commerce Department. As a matter of fact, WPB automatically expires on Dec. 31, unless the President renews it; appropriations are on hand until June 30, 1946.

Lend-Lease Ends; Banking Begins

The end of the war with Japan brought speedy cancellations of all lend-lease contracts, including those for textiles, with the exception of contracts that recipient governments agreed to take over and contracts which it would be to the advantage of this country to complete. Now we have a new problem of establishing purchasing and credit machinery for postwar foreign requirements. There is no question as to the great need for textiles abroad, but there is question as to whether or not the various nations are in position to effectuate the necessary financial arrangements.

According to the present setup, foreign governments may arrange for further shipments by obtaining loans from the Export-Import Bank. Although the bank has available $3,500,000,000, it is not fully organized to start operations and the capital on hand is inadequate. Thirty-year loans at an interest rate of 2⅜% have been granted in some cases. One of the largest textile programs to be held up by termination of lend-lease is China's program. It is understood that China will have an opportunity to continue her contract under a 30-year loan if she desires. Eventually foreign buyers will be able to finance purchases through the projected international bank.

The White House statement estimated that uncompleted contracts for non-munitions and finished goods which United States has not yet transferred to lend-lease participants amounted to $2,000,000,000 and that stockpiles abroad are valued at $1,000,000,000 to $1,500,000,000. Allied governments will have an opportunity to negotiate for goods in the stockpiles or in process of delivery.

EXPORTS. Foreign Economic Administration authorities have estimated that in about six months, the cotton-textile industry will have caught up on civilian orders sufficiently to take full advantage of huge exporting opportunities; the rayon industry may be ready in possibly three or four months. Market in Japanese-occupied territories should be of particular importance because it is believed that the Japanese have stripped these areas of textiles, and possibly of textile machinery, to take care of their own war needs. There has been speculation on what China will be able to do in the textile market, but FEA experts say it will be at least ten years before China will be able to export textiles in any amount. Brazil is making a bid for the Far Eastern export market, and she has produced the type of textiles that are suitable for Dutch West Indies and other islands in the Southwest Pacific. After a time the United States may have surpluses of cotton textiles which will be in great demand in the Far East. How long this market will last is a matter of speculation, depending on many factors not known at this time.

Salvage by Quartermaster Corps is an important part of holding down the net cost of Army supplies. The sewing room shown is at a sub-depot in New York of the Jersey City QM Depot, where large lots of equipment are reconditioned. This room is equipped with seven types of Singer sewing machines.

Textile Machinery Relieved of Controls

With the revocation of L-215, no WPB preference ratings remain for manufacturers of textile machinery. It is expected that ratings on MRO items will be lifted as of Oct. 1, 1945. Demand for textile machinery is extremely heavy, and WPB officials look for a rapid rise in production with the easing of the manpower situation. In order to increase production, the equipment industry has been carrying out an extensive subcontracting program. For example, one company has had 48 different foundries producing gray iron castings.

PRICE CONTROLS. Broadly speaking, the textile-machinery manufactur-

(*Continued on page 238*)

EXPORT OF TEXTILE MACHINERY

Canada, Mexico, Colombia, Chile, and Cuba, in that order, were the five principal destinations of textile machinery and machine parts exported from the United States during the period January through May, 1945. Details of shipments to 40 different countries in 15 machine catagories are given in the table appearing on page 175 of this issue. The table, which shows these exports in the five-month period as totalling $5,660,619, was compiled by the U. S. Department of Commerce. Over 90% of the equipment was second-hand.

Look At Alabama!

Are you considering the establishment of a new plant?

Look At Alabama!

Will you require an adequate source of intelligent labor?

Look At Alabama!

Are cheap, high-quality fuel (coal, gas, oil) and a dependable source of electric power important factors in your operation?

Look At Alabama!

Will you need an unlimited supply of relatively pure water?

Look At Alabama!

Are plentiful rail, water and highway transportation facilities and market accessibility important considerations?

Look At Alabama!

Do you require a year 'round good seaport for export or import?

Look At Alabama!

Would a pleasant, temperate climate help lower construction, production, and maintenance costs?

Look At Alabama

During the past decade, many industries (steel, aluminum, paper, gypsum, silk, chemical, electrical appliances, and others) have established plants in Alabama after careful consideration of advantages offered. It was our pleasure to collaborate with many of them, at their request, in the preparation of economic surveys covering specific locations in Alabama. This service is offered you.

INDUSTRIAL DEVELOPMENT DIVISION

ALABAMA POWER CO.

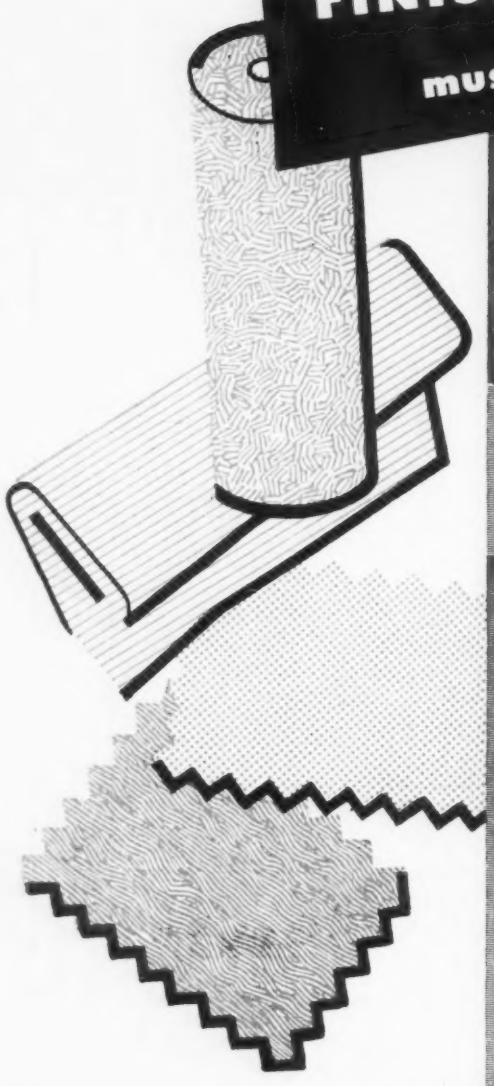
Birmingham, Ala.

EXPORT OF TEXTILE MACHINERY

January through May 1945 — *(Used and new machinery, excepting sewing and leather machinery.)* — *U. S. Dept. of Commerce*

	7500		7501		7502		7504	7505	7506	7507	7508	7515		7516		7517	7540	7542	7544	7549	
	Machine-Knit Hose, Full Fashioned		Machine-Knit Hose, Circular		Other Circular Knitting Machines		Other Knitting Machines and Parts	Winders and Parts	Carding and Other Preparing, Spinning, and Twisting Machinery and Parts Thereof			Looms, Cotton		Looms, Not Elsewhere Specified		Loom Parts	Braiding and Insulating Machines and Parts	Beaming, Warping, and Slashing Machines and Parts	Dyeing and Finishing Machines and Parts	Other Textile Machinery and Parts	Totals
									Cotton	Wool	Other										
	No.	Value	No.	Value	No.	Value	Value	Value	Value	Value	Value	No.	Value	No.	Value	Value	Value	Value	Value	Value	**Value**
Iceland	...	.....	...	.....	...	.....	33	.....	.....	1,797	.....	...	.....	...	.....	.....	.....	283	.....	.....	**2,113**
Canada	8	12,792	22	4,398	6	2,408	166,234	150,637	223,097	161,904	48,874	155	84,884	120	112,224	314,634	42,857	29,179	80,589	381,082	**1,815,793**
Newfoundland	...	.....	...	.....	...	.....	.....	.....	871	2,402	.....	...	.....	...	.....	40	.....	.....	.....	13	**3,326**
Mexico	2	7,750	14	3,557	13	3,125	57,391	67,084	92,343	78,514	46,504	135	36,087	75	22,106	98,532	1,775	7,807	45,506	254,625	**822,706**
Guatemala	...	.....	3	1,087	...	.....	240	375	16,910	3,761	.....	50	8,992	...	.....	7,958	.....	3,500	.....	675	**43,501**
El Salvador	...	.....	...	.....	...	.....	25	1,492	11,707	.....	.....	...	.....	...	.....	1,520	3,400	.....	24,280	3,023	**75,447**
Br. Honduras	...	.....	...	.....	...	.....	.....	.....	.....	.....	.....	...	.....	...	.....	.....	.....	.....	.....	22	**22**
Honduras	...	.....	...	.....	...	.....	45	13	60	.....	.....	...	.....	...	.....	338	.....	.....	.....	15	**471**
Nicaragua	...	.....	...	.....	...	.....	50	325	.....	.....	.....	...	.....	...	.....	.....	.....	.....	1,750	769	**2,894**
Costa Rica	...	.....	8	1,120	2	200	266	225	1,113	.....	.....	...	.....	...	.....	1,530	.....	.....	.....	1,292	**5,746**
Rep. of Panama	...	.....	...	.....	...	.....	.....	.....	12	.....	.....	...	.....	...	.....	.....	.....	.....	.....	.....	**12**
Cuba	...	.....	14	9,419	...	.....	11,361	30,290	119,005	.....	.....	132	79,587	...	.....	55,926	.....	365	297	73,592	**379,842**
Jamaica	...	.....	...	.....	...	.....	2,623	.....	.....	.....	.....	...	.....	...	.....	.....	.....	.....	.....	19	**2,642**
Haiti	...	.....	...	.....	...	.....	18	2,100	3,200	.....	.....	150	19,258	...	.....	214	.....	.....	.....	2,420	**27,210**
Dominican Republic	...	.....	2	1,523	...	.....	12	.....	15,482	55	.....	...	.....	...	.....	3,385	24	1,931	7,208	32,550	**62,170**
Trinidad	...	.....	...	.....	...	.....	79	.....	.....	.....	.....	...	.....	...	.....	.....	.....	.....	.....	495	**574**
Colombia	...	.....	60	14,170	...	.....	20,704	26,678	64,061	34,996	10,612	90	23,400	4	11,027	130,487	71	6,249	114,967	106,261	**563,683**
Venezuela	...	.....	12	4,798	...	.....	11,022	10,688	4,366	.....	2,466	24	7,519	...	.....	13,763	.....	1,750	3,640	4,855	**64,867**
Surinam	...	.....	1	418	...	.....	56	.....	.....	.....	.....	...	.....	...	.....	.....	.....	.....	.....	620	**1,094**
Ecuador	...	.....	...	.....	...	.....	570	1,344	4,618	.....	.....	...	.....	...	.....	2,800	.....	.....	.....	799	**10,131**
Peru	1	2,101	...	.....	2	2,411	5,558	25,717	28,317	75	16,369	...	.....	...	.....	29,339	.....	7,469	8,743	51,105	**177,879**
Bolivia	...	.....	...	.....	1	650	.....	1,842	8,308	.....	.....	...	.....	...	.....	2,946	.....	.....	1,125	8,913	**23,784**
Chile	...	.....	14	7,590	1	1,668	18,550	7,326	181,516	19,698	67,508	30	10,970	48	23,860	28,008	151	4,211	14,467	38,618	**464,141**
Brazil	...	.....	...	.....	...	.....	30,746	47,039	35,838	7,739	9,493	46	18,890	16	5,110	35,577	.....	4,633	7,794	115,520	**318,371**
Paraguay	...	.....	...	.....	...	.....	.....	.....	621	6,103	.....	...	.....	...	.....	520	.....	.....	.....	.....	**7,244**
Uraguay	...	.....	...	.....	...	.....	11,701	9,303	408	16,983	.....	10	6,500	...	.....	19,737	.....	1,900	11,588	17,479	**95,599**
Argentine	...	.....	...	.....	...	.....	7,528	73	141	1,036	62	...	.....	13	3,862	215	.....	.....	.....	1,600	**14,517**
U. K.	...	.....	1	3,635	...	.....	5,640	49,775	20	10	5,296	...	.....	...	.....	60,469	18,555	.....	40	15,789	**159,229**
Eire	...	.....	...	.....	...	.....	788	.....	20	.....	.....	...	.....	...	.....	.....	.....	.....	.....	.....	**808**
U. S. S. R.	...	.....	...	.....	...	.....	42	.....	.....	.....	.....	...	.....	...	.....	1	.....	.....	.....	3,650	**3,693**
Spain	...	.....	...	.....	...	.....	.....	8,125	.....	.....	.....	...	.....	...	.....	.....	.....	.....	.....	.....	**8,125**
Portugal	...	.....	...	.....	...	.....	71	.....	.....	.....	.....	...	.....	...	.....	.....	.....	.....	1,185	115	**1,371**
Iraq	...	.....	...	.....	...	.....	17	.....	.....	.....	.....	...	.....	...	.....	.....	.....	.....	.....	802	**819**
Palestine	...	.....	...	.....	...	.....	2,155	6,022	487	10,410	.....	...	.....	...	.....	.....	.....	180	.....	2,897	**22,151**
Afghanistan	...	.....	...	.....	...	.....	.....	.....	4,799	.....	.....	...	.....	...	.....	1,450	.....	.....	.....	2,213	**8,462**
Egypt	...	.....	...	.....	...	.....	1,000	.....	.....	.....	.....	...	.....	...	.....	30,219	.....	.....	.....	790	**32,009**
Portuguese Africa	...	.....	...	.....	...	.....	.....	.....	.....	.....	.....	...	.....	...	.....	.....	.....	.....	.....	72,000	**72,000**
Belgian Congo	...	.....	...	.....	...	.....	.....	4,068	22,282	.....	21,449	...	.....	...	.....	6,133	.....	2,160	.....	18,430	**74,522**
Union of So. Africa	...	.....	...	.....	...	.....	1,710	519	286	3,500	.....	...	.....	...	.....	.....	.....	.....	.....	26,292	**32,307**
Southern Rhodesia	...	.....	...	.....	...	.....	.....	.....	.....	.....	.....	...	.....	...	.....	.....	.....	.....	.....	2,101	**2,101**
Other Countries	...	.....	...	.....	2	5,704	15,340	73,959	15,933	.....	833	...	.....	57	26,140	120,787	2,237	26,187	8,690	31,415	**449,225**
Totals	**11**	**22,643**	**151**	**51,715**	**27**	**16,166**	**371,575**	**525,019**	**855,824**	**349,658**	**229,466**	**822**	**296,097**	**333**	**214,329**	**966,528**	**69,070**	**97,804**	**331,869**	**1,272,856**	**5,660,619**

FINISHES OF THE FUTURE must SERVE to SELL!



"Duration Quality" **must be the first *Peace Casualty!***

Quaker believes buyers will demand *permanency* in qualities that give a fabric its initial sales appeal.

The applied cost of durable finishes need not be excessive . . . may even be turned into extra profit!

This is the Quaker policy— to approach each research problem from the standpoint of *quality*.

Look to Quaker for New Developments in Textile Finishes!

QUAKER
PRO-SO-TEX FINISHES
DIAPENE FINISHES

QUAKER CHEMICAL PRODUCTS CORP.
CONSHOHOCKEN, PA.
MANUFACTURERS OF *SPECIAL CHEMICALS FOR TEXTILE PROCESSING AND FINISHING*

TEXTILE Equipment NEWS

Warner & Swasey Building Textile Machines

The Warner & Swasey Co., machine-tool builder of Cleveland, is interested in the production of three different textile machines, according to information given to TEXTILE WORLD.

One of the three, the Aveco warp-knitting (tricot) machine is to be built under contract for the American Viscose Corp. through its subsidiary, Aveco, Inc. According to American Viscose, the Aveco machine, developed in the former Collins Looms Works shop at Amsterdam, N. Y., is still in the process of refinement. William Kellogg, president of Aveco, Inc., recently returned from England where he inspected the Courtaulds F.N.F. machine (described in the February, 1945, issue of TEXTILE WORLD).

Uxbridge Worsted Co. is working with Warner & Swasey on the development of a worsted gill box. The original model is now being redesigned, and it is expected that further development will take considerable time.

Warner & Swasey has been negotiating for the last two years with Sulzer Bros., Winterthur, Switzerland, concerning the building of the Sulzer shuttleless loom. An executive of Warner & Swasey has just returned from a three months' business trip to Switzerland; but no deal has been completed, no contract signed, and production—if any—is at least two years away, according to Warner & Swasey officials.

The entrance of the company into the textile field is due to the expansion of its facilities, to meet the war demand, considerably beyond peacetime requirements for machine tools, according to Charles J. Stilwell, Warner & Swasey president. He said, "Our new-product program is planned not merely for the purpose of utilizing our expanded facilities, but also as a protection against the extreme fluctuations which are peculiar to the machine-tool industry, and the impact of the forthcoming sales of government-owned machine-tool surpluses."

New Continuous Washer Cleans Printing Blanket

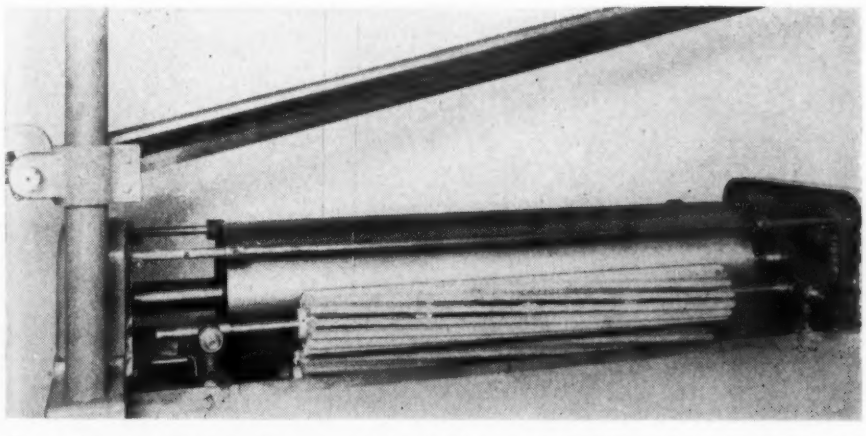


Fig. 1. The new blanket washer uses revolving brushes and a specially positioned doctor blade. (Rice Barton)

A new blanket washer for use in connection with textile printing machines has been announced by Rice Barton Corp., Worcester, Mass. Printing materials are washed from the blanket with lukewarm water by revolving brushes, and excess water is removed by a specially positioned doctor blade, so that the blanket is returned to the printing area sufficiently dry and clean for continuous operation.

The washer is being built in two standard sizes: Unit "A" for printing machines with faces up to 50 in., and Unit "B" for machines with faces

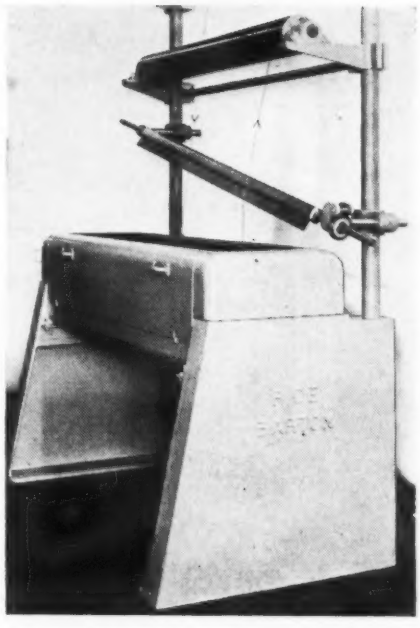


Fig. 2. Arrows indicate the running direction of the printing blanket at the washer. (Rice Barton)

up to 60 in. A floor space of approximately 41x79 in. is required by the former.

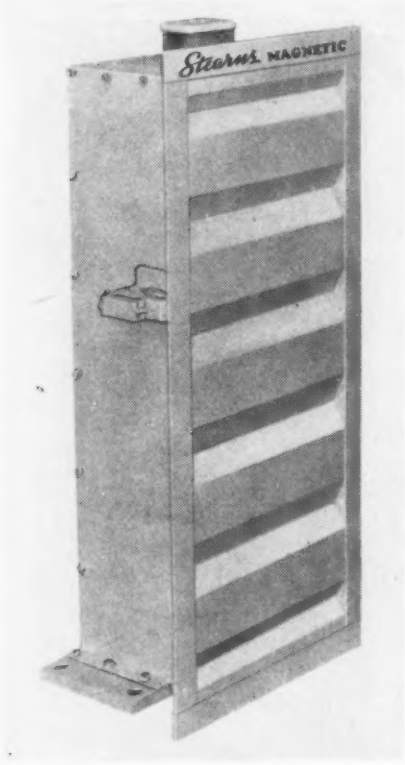
It is said that the washer will increase the life of the blanket and that it is adaptable for handling a wide range of fabrics. Most goods can be printed without backgrays and accompanying handling equipment.

The motive power required to operate the washer is provided by the blanket itself.

Tramp Iron Removed By Air-Duct Magnet

A new air-duct magnet for use in connection with textile processing equipment to collect miscellaneous tramp-iron particles in air-driven material is being manufactured by the Stearns Magnetic Mfg. Co., Milwaukee 4, Wis.

The magnet is installed in the flow of cotton, wool, shoddy, or other ma-



The air-duct magnet collects tramp-iron from the stock passing over its working faces. (Stearns)

terial so that the stock passes over the faces of the magnet. The working faces, arranged like steps and covered with non-sparking stainless steel, are designed in sizes 12x16, 12x22, and 12x32 in.

The magnet can be wound for any standard direct-current voltage available in the customer's plant, and the collected tramp-iron can be discharged by opening the electrical circuit to the magnet.

Courtaulds to Manufacture High-Speed Tricot Machine

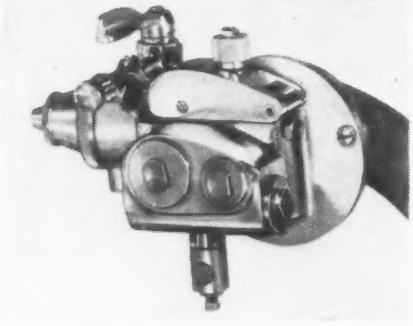
Courtaulds, Ltd., Coventry, England, large rayon producers, will manufacture the radically new high-speed F.N.F. warp-knitting machine, in addition to starting extensive manufacture of machinery for its own use, according to a cable received this month from TEXTILE WORLD's London office. Plans now completed call for taking over one of the Ministry of Aircraft production factories in Lancashire to handle this new field of operations. The plant covers more than a million sq. ft. and employs 3,000 workers. In it, Courtaulds will process yarn and manufacture the tricot machine (described in February issue of TEXTILE WORLD).

It is understood that Courtaulds will not license other builders but will sell its F.N.F. machine throughout the world.

Courtaulds is also increasing by 50% the size of its staple-fiber factory in North Wales, and has new sites in Belfast, West Cumberland, and Dundee.

Its Canadian plant is being extended, and an Australia site has been purchased for a large rayon and staple-fiber factory.

NEW METAL-SPRAYING GUN OPERATES AT HIGH SPEED



A new metal-spraying gun, known as the Model F, has been announced by the Metallizing Co. of America, Chicago, Ill. The new gun is said to be lighter in weight, better balanced, and smoother and faster in operation than previous models. It can be assembled or dis-assembled without the use of special tools. (Metallizing Co.)

New Low-Water Cutoff Protects Electric Stills

The cutoff is positive in action and requires no maintenance. (Barnstead)

A new floatless, low-water cutoff for use with a water still heated by electricity has been announced by the Barnstead Still & Sterilizer Co., Inc., Boston, Mass. The cutoff automatically shuts off the electricity if water in the evaporator drops below the proper operating level. This is accomplished by the cutoff operating on a weak current which flows through an electrode rod into the water in the evaporator. When the water drops below the end of the rod, the current is broken and a magnetic switch operates to shut off the electricity.

An important feature of the new cutoff is the remote control cabinet which may be mounted in any convenient place regardless of the still location. This makes starting and stopping the still and resetting the cutoff easy. The device operates on alternating current and may be installed on stills now in operation.

Instrument Records Machine Running-Time

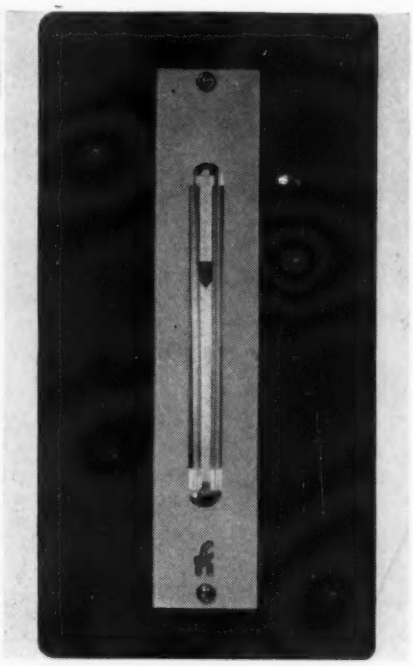
A new instrument for recording machine running-time has been announced by The Bristol Co., Waterbury 21, Conn. The instrument checks machine performance by recording the "on" and "off" time of production machinery and the periods at which they occur. The running-time readings are magnified in such a way that the total operating time of a machine can be determined to within a few seconds.

A complete record of the "on" and "off" time of a machine is recorded by the instrument. (Bristol)

Panel Mount Makes Rotameter Convenient

A new panel-mounted Rotameter to meet the growing need for panel centralization of instruments that indicate pressure, flow, temperature, etc., has been announced by Schutte & Koerting Co., Philadelphia, Pa. Although the instrument itself is basically the S-K Universal Rotameter, several advantages are pointed out. A frosted

glass window with a central clear-glass aperture and back lighting make the registrations easy to read. The instrument is installed flush in the panel board and is supported directly behind. Provision is made for ready maintenance accessibility.



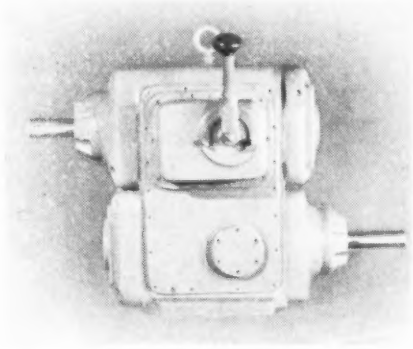
Rotameter is lighted from the back. (Schutte & Koerting)

Heavy-Duty Transmission Provides Variable Speed

A heavy-duty, hydraulic, variable-speed transmission, to be used as a drive unit for industrial applications calling for continuous-duty performance under varying conditions of load and speed, has been announced by the Portman Machine Tool Co., 70 Portman Road, New Rochelle, N. Y.

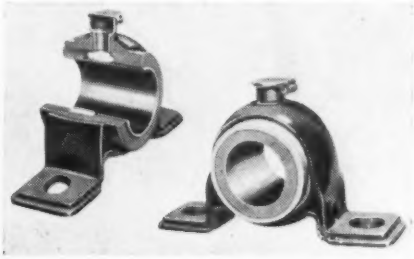
Known as the Portman Model HT-1, the transmission makes possible variable speeds from zero at full-neutral position to maximum motor speeds, both forward and reverse. Torque output remains constant at all speeds. Various control mechanisms, in addition to the hand lever shown in the photograph, are available.

Over-all dimensions are: 8½-in. width, 16¾-in. height, 18½-in. housing length. Horsepowers available are 5, 7½, 10, 15, and 20. Maximum speed depends upon the speed of electric drive motors or other prime movers, and such speeds are rated at 900 to 1700 r.p.m.



The diameter of the shaft in the HT-1 transmission is 1⅜ in., and the shaft-extension lengths are 3½ and 4½ in. (Portman)

BRONZE-BUSHED BEARING PROTECTS BLOWER SHAFT

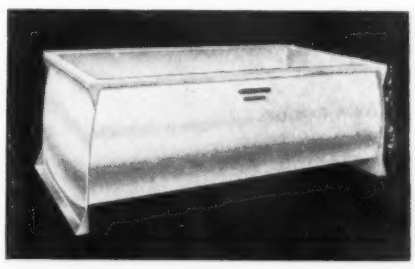


A new low-priced, bronze-bushed bearing for shall shafts especially adapted for fan and blower service, has been announced by the Dodge Mfg. Corp., Mishawaka, Ind. A liberal oil reservoir with a close fitting wick surrounds the bronze capillary bushing and provides the required amount of oil as needed. Wick and oil cup are supplied with bearing. (Dodge)

Curved Sides Strengthen Stainless Steel Tanks

Stainless steel tanks with increased strength per weight have been announced by Rodney Hunt Machine Co., Orange, Mass. The extra strength is realized by pre-forming the tank sides to a curve determined by hydrodynamic principles.

The curved sides do not need reinforcement to resist pressures built up inside the tank, the manufacturer reports, and tanks built on this principle have proved satisfactory for textile wet-finishing machines.

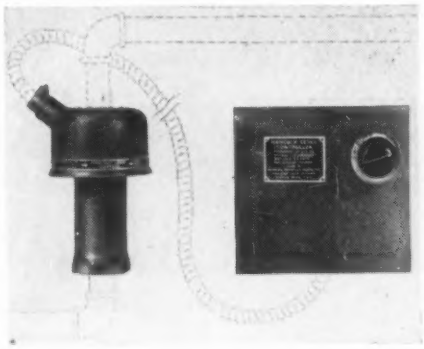


The curved sides of the tank give an increase in strength. (Rodney Hunt)

Level Float Control

The Hancock Valve Div., Manning, Maxwell & Moore, Inc., Bridgeport, Conn. announces the Hancock Electric Level Float Control. This level control was designed to give accurate and dependable liquid level to within a fraction of an inch, and is intended to be automatic in action.

The level control is free from electrical switching or contacts within or without the float chamber. There are no levers, linkages, bellows, stuffing boxes, cooling fins, mercury switches, or wearing parts. By the simple adjusting of a screw the level of the liquid can be raised or lowered.



Control for maintaining liquid level. (Manning, Maxwell & Moore)

New Fluorescent Lamps

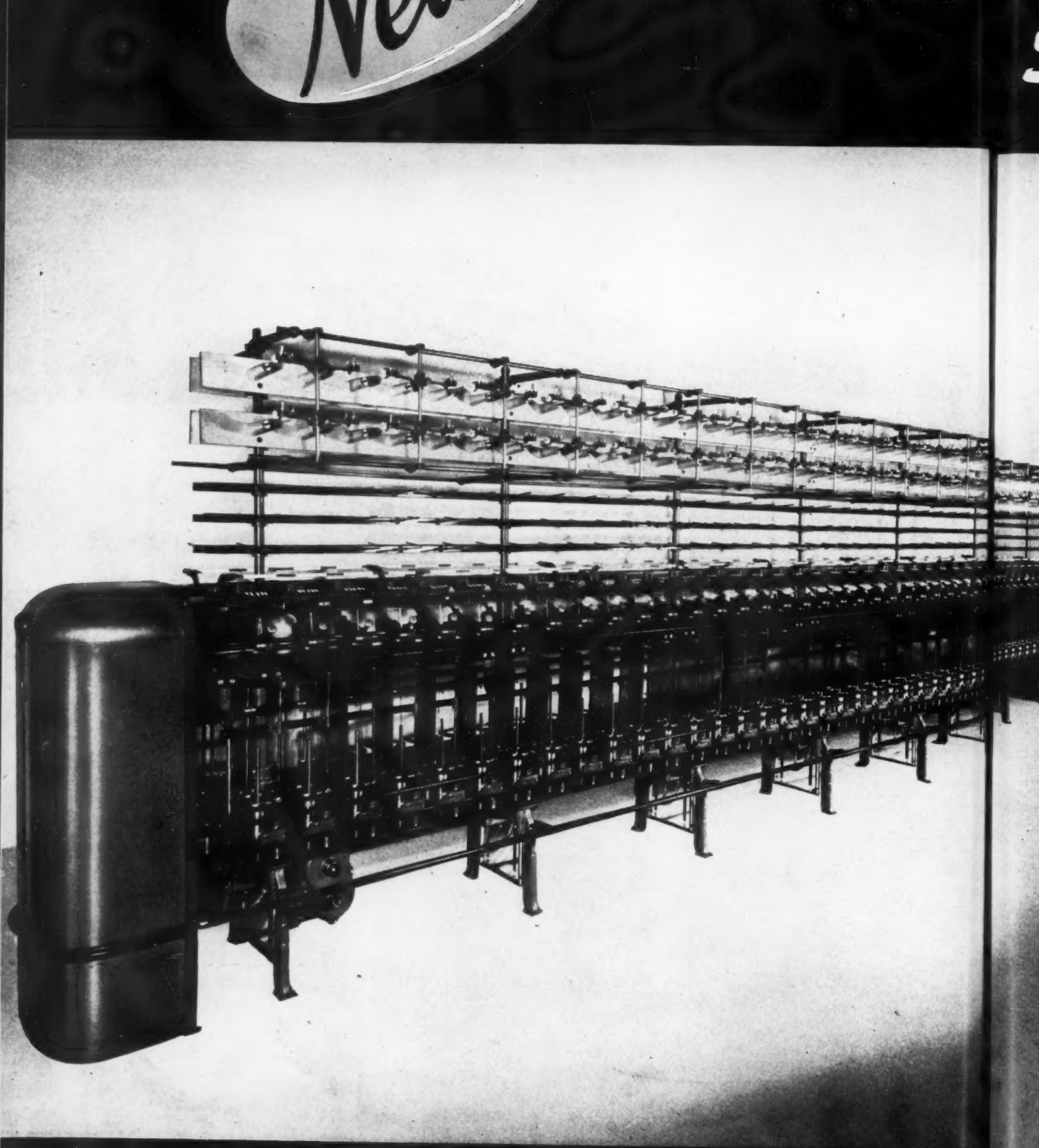
Fluorescent lamps providing instant starting, higher efficiencies, and simplified installation and maintenance are announced by Sylvania Electric Products Inc., Salem, Mass. They will be supplied in smaller diameters and new standard lengths up to 96 in.

Operating without starters, these lamps (designated as LS types) may also be operated in series on a single ballast at 100 or 200 milliamperes or at other currents within this range to provide high lighting levels or lower intensities.

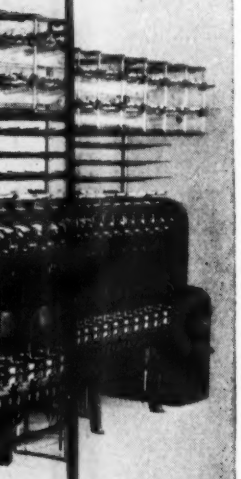
The elimination of starters simplifies maintenance. Life of type LS fluorescent lamps at 200-milliampere operation is expected to be comparable to that of 40-watt standard fluorescent lamps. Their efficiency, as high as 65 lumens per watt, is considerably higher than previous types.

Fluorescent lamps that start immediately and have increased light efficiency. (Sylvania)

THE *New* ATWOOD



D RING TWISTER *for*
Spuns, Woolens AND *Worsteds*



Here is The Twister that meets your needs.

This machine is the latest development in Ring Twisting. It can be equipped with a Builder Motion to produce practically any type of Wind, straight or taper. Various Creel Designs allow for delivering from cakes, cones, bobbins or tubes. A wide range of twist can be obtained and packages up to 5" by 9" can be built.

It means *no more knots* in plyed yarns – the Atwood Stop Motion provides for knotting of single ends. Running with broken ends is a thing of the past.

It's extraordinarily compact.

Its working parts are conveniently located for efficient, clean operation and readily accessible for maintenance.

Every detail of design and construction meets *your* idea of a Ring Twister – a fact you can readily determine to your own satisfaction the moment you take a look at one of these new Atwoods.

Ask us to give you all the facts and figures on this new Atwood Ring Twister for your yarns.

ATWOOD

ATWOOD DIVISION

Farrel-Birmingham Company, Inc.

STONINGTON, CONN., U. S. A.

Dyes & Chemicals — PRODUCTS & PROCESSES

Nylon Dry-Knitting Size

SYZON; L. Sonneborn Sons, Inc., 88 Lexington Ave., New York 16, N. Y.

Syzon, a solvent-soluble nylon sizing material, can be applied simply without the use of special machinery and permits nylon to be knit dry—two obvious advantages over prewar sizing, Sonneborn technicians state.

Syzon produces a tough, yet resilient, film that is insensitive to normal changes in humidity and temperature, it is stated. Stitch formation is clear and full-fashioned blanks lie sufficiently flat to permit easy seaming and looping.

The material is recommended for circular as well as full-fashioned knitting and for welt yarns as well as leg.

Slime and Algae Inhibitor

OAKITE AIREFINER No. 52; Oakite Products, Inc., 42 Thames St., New York 6, N. Y.

A new chemical development with line solubilizing, fungi-static, and detergent properties designed to inhibit slime growth and control formation of lime scale deposits in evaporative condensers and evaporative coolers is announced by Oakite Products. The material is a white powder, completely soluble, odorless, and non-toxic. One ounce added to 10 gal. of make-up water in sump is said to keep water sweet, prevent slime and hard lime scale from forming on coils, keep equipment clean, and minimize need for maintenance.

Alkali That Decomposes

TETRAETHANOLAMMONIUM HYDROXIDE; Carbide & Carbon Chemicals Corp., 30 East 42nd St., New York, N. Y.

Tetraethanolammonium hydroxide is offered by the manufacturer as an aqueous solution containing 41% of the above-mentioned chemical. It is a strong base and at ordinary temperatures is quite stable, but on heating it decomposes to form weakly alkaline ethanolamines; thus, it possesses desirable features in processes in which it is an advantage to destroy a strong base that has been useful at lower temperatures.

The manufacturer states that in textiles it has been found useful in printing Rapidogen dyestuffs on fabrics which could be injured by the action of strong bases. Excellent color values are said to result from its use.

New Resin Series

VIBRON RESINS; United States Rubber Co., Naugatuck, Conn.

An entirely new series of alkyd resins has recently been developed by the U. S. Rubber Co. It is said that these resins may be combined with fabrics to make an improved type of artificial leather, while other fabrics, such as slip-covers or upholstery fabrics, may be treated with them to produce new and interesting finishing effects.

In addition, it is said they may be combined with spun glass and other fibers to give a high strength. The resins vary in such physical properties as hardness, flexibility, and abrasive resistance; and particular effects can be obtained by using different types.

Technical data for the use of the resins may be obtained from the company.

Water Repellent

ALUMINUM ACETATE; American Cyanamid & Chemical Corp., 30 Rockefeller Plaza, New York, N. Y.

Aero brand aluminum acetate 20% sulphate free is a purified solution of aluminum acetate which when combined with wax emulsions, soaps, and other fatty materials gives a satisfactory water-repellent finish. Its use is said to offer advantages over the one-piece water-repellents, since the aluminum oxide content of the treating bath may be varied as the finisher desires.

Mill Maintenance — TO KEEP 'EM RUNNING

Fire Extinguishers Must Have Attention

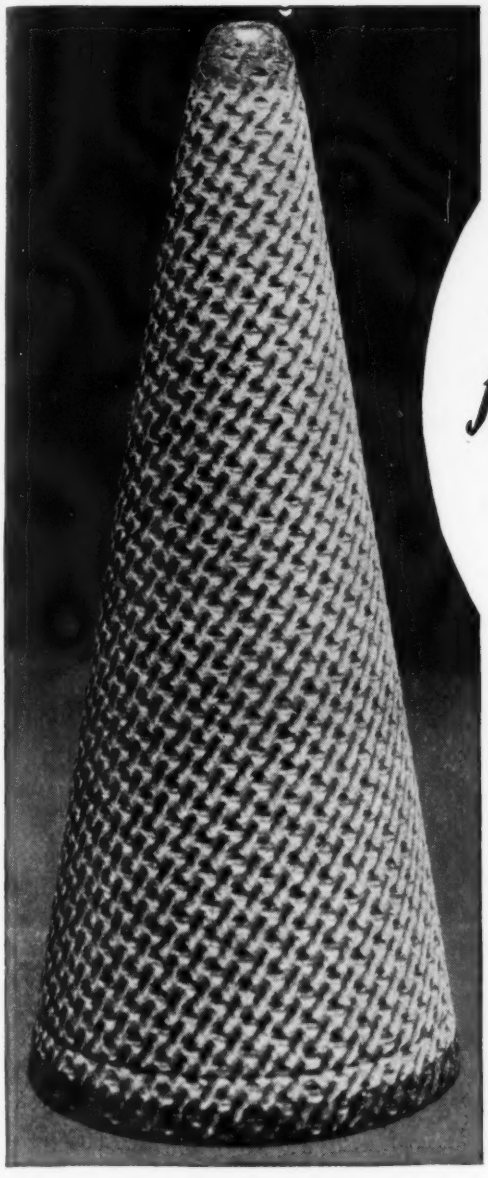
Pyrene fire extinguishers require periodic inspection and testing to assure effectiveness when they are needed to put out a fire. According to the Pyrene Mfg. Co., each Pyrene or similar fire extinguisher should be tested at least once a year by partially discharging its contents by operating the handle.

The best way to test a Pyrene gun is to pump its contents into a dry glass container. The gun should discharge its liquid on both the inward and outward stroke of the handle. The fluid caught in the container may be put back in the extinguisher and used. The gun should at all times be filled to ½ in. of the filler-cap opening. Before replacing the gun, the liquid remaining in the discharge tube should be removed by shaking the extinguisher.

The following "things to remember" are pointed out by the manufacturer:

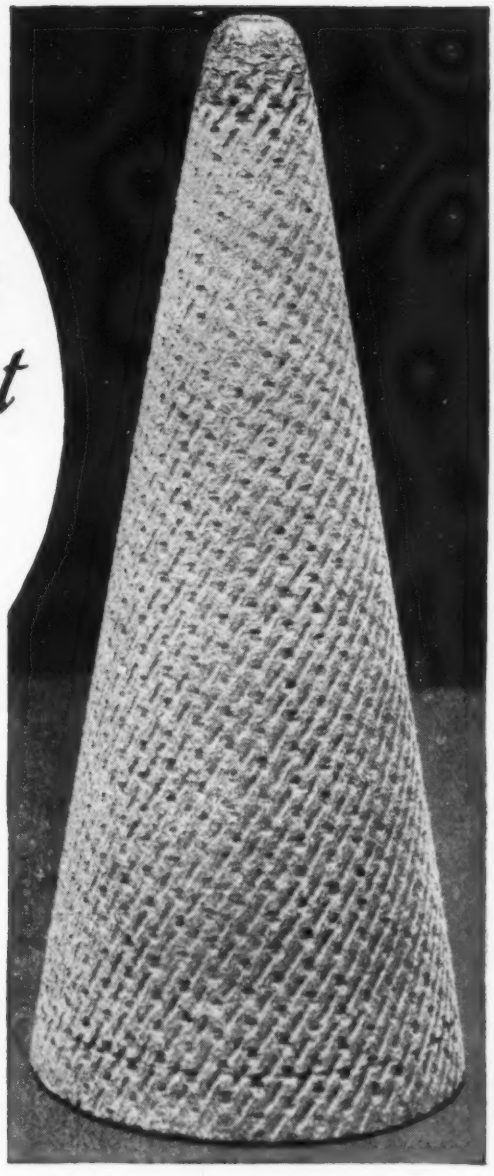
1. Keep extinguishers filled at all times.
2. Use only the fluid for which the gun was made.
3. Never put water in the extinguisher for any purpose.
4. Use no lubrication for the gun.
5. Test extinguisher periodically.
6. Install the gun in a vertical position.
7. If the extinguisher is subjected to constant vibration, it should be equipped with a "shock absorber."

Approximately 95% of the troubles reported with Pyrene extinguishers are traceable, the manufacturer states, to (1) refills unsuited to the gun, (2) water used for testing the extinguisher, (3) use of a lubricant, and (4) extinguisher remaining empty or partly filled for a long period.



The Right Cone for the Right Purpose

9° 15′



9° 15′ regular—A standard type, having regular corrugated surface regular round nose burnished and stained—with single score at base. For winding 6" traverse package of a wide range of weaving or warp yarns, knitting and hosiery yarns—also suitable for coarse counts and woolens and worsteds.

9° 15′ same cone—Velvet Surface—comes closest to being an all purpose cone for high grades and fine counts of cotton yarns for weaving and knitting. Widely used for double carded and combed yarns of best quality. Round burnished dyed nose and single score at base.

While one type of cone may have many general applications the details of its construction must be varied to suit the variations peculiar to almost every mill. The variations start with the surface best suited to a particular yarn and range from round to open type nose, plain, stained or lacquer tips, scoring, etc. There are dozens of variations possible with the 9° 15′ cone to suit all mill conditions and yarn specifications. SONOCO'S Technical Service Department is available to work out the best solution for every use.

ARMY (E) NAVY

DONT WASTE PAPER SAVE WASTE PAPER

sonoco

SERVES THE WORLD

PAPER CARRIERS

SONOCO MAKES *EVERYTHING* IN *PAPER CARRIERS*

SONOCO PRODUCTS COMPANY

BRANTFORD ONT. HARTSVILLE S. C. MYSTIC CONN.

DEPENDABLE SOURCE OF SUPPLY

Kinks AND SHORT-CUTS

A $25 WAR BOND FOR YOUR IDEA

A $25 War Bond will be awarded each month for the most useful "kink" published in this department. This contest is open to all readers of TEXTILE WORLD, and there is no limit to the number of entries any one person may make.

Contributions must be received not later than the last day of the month to be eligible for the award for the second succeeding month. Items may pertain to production methods, mill engineering, safety, cutting costs, improving quality, speeding up production, in brief any little device, stunt, kink, or short-cut which you have tried out in your own mill and which you believe will be helpful to other mill men. Items should contain sufficient detail to permit other mill men to utilize the ideas in their own operations. Previously published material is not eligible for the award. Judges of the contest are the editors of TEXTILE WORLD.

TEXTILE WORLD shall have the right to publish any items submitted. Items which are accepted will be paid for at our regular rate for this type of matter with extra payment for appropriate sketches or photographs. The sketch you submit need not be a finished drawing.

In writing to this department, give your real name and address as evidence of good faith and to permit payment for items accepted. Please advise whether your name may be used with the kink.

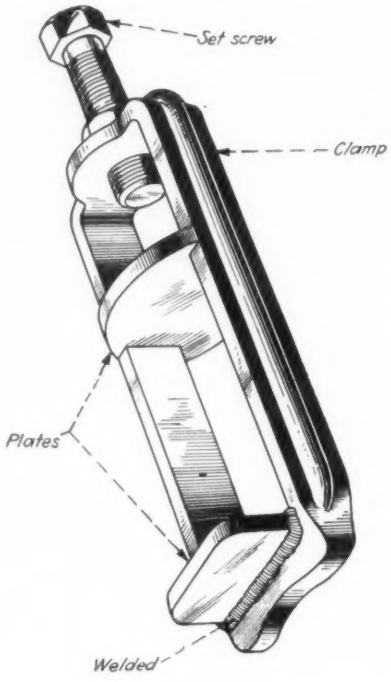
Contributions should be addressed to: Technical Editor, TEXTILE WORLD, 330 West 42nd St., New York 18, N. Y.

★ **WAR BOND PRIZE WINNER FOR SEPTEMBER**

(July Contest)

Plate Welded to Holder Protects Picker Stick

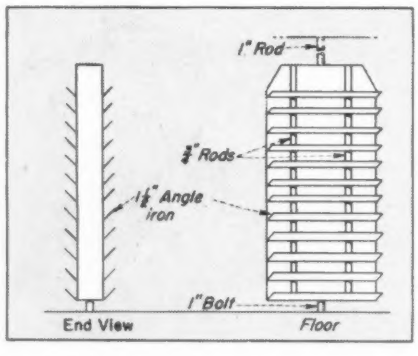
Tightening the setscrew in the lug-strap holder on a picker stick will draw the clamp into the wood and crush the grain, causing the picker stick to crack. This, of course, shortens the life of the stick. We eliminate this crushing of the grain by using a metal plate at the back of the clamp as well as the front. To guard against losing the back plate, we weld it onto the holder. *(K-367) Edwin von Bergen, Hazelton, Pa.*



The front plate must be loose so that it can move inward as the setscrew is tightened.

Drill Rack Saves Time for Machinist

Having a designated place to keep drills and reamers when not in use saves time and energy which machinists often expend in searching for the tools they need. Here is an inexpensive way to build a rack to eliminate this loss of time.

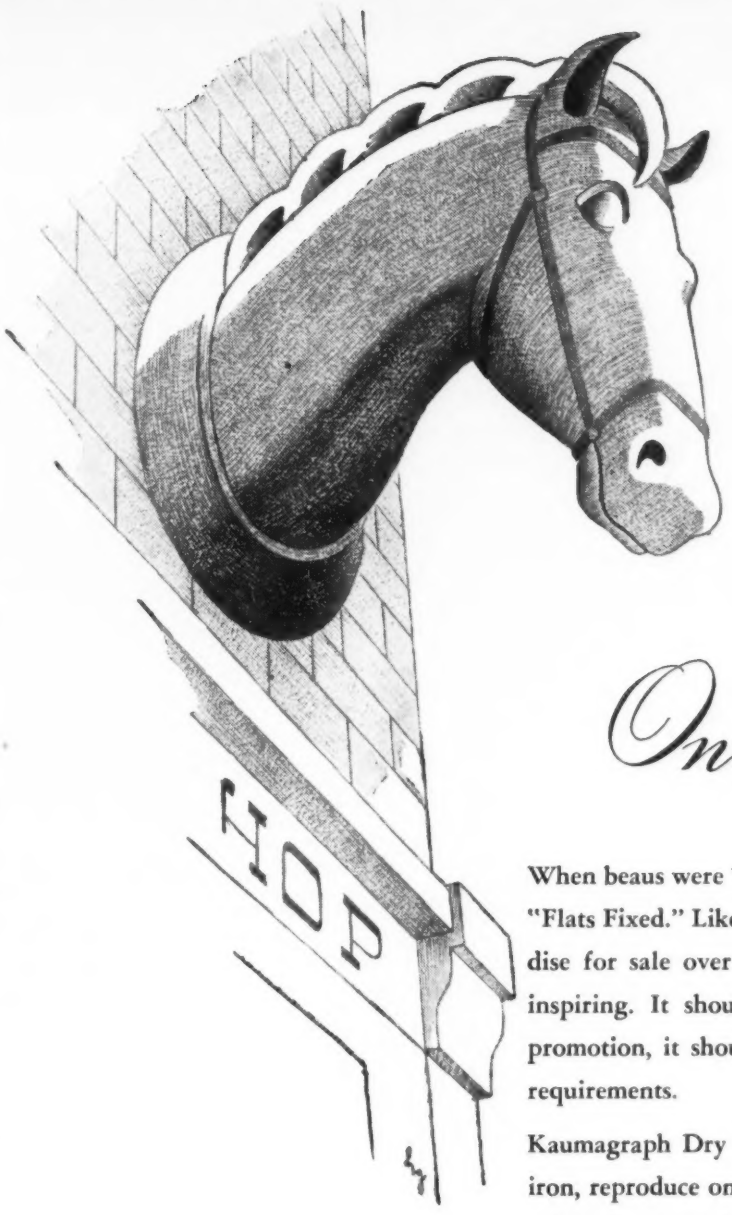


Drills and reamers are placed in their assigned places on the angle-iron shelves.

A piece of 75° angle iron with ¼x1½-in. sides is cut into 16-in. lengths. The number of lengths needed will depend upon the supply of drills and reamers a mill uses. They form the shelves for holding the tools.

The frame which supports the shelves may be made of two pieces of band iron of any convenient width and thickness, as 3x¼ in. Place these pieces 16 in. apart and weld one end of the short side of the angle-iron lengths to each. These should be welded about 3 or 4 in. from each other so there will be plenty of room for the machinist to remove or replace the drills. If additional support is needed for the shelves, one or more pieces of band iron may be welded to the shelves between the outside uprights.

A convenient arrangement for the rack is to weld a row of angle-iron



Once upon a time

When beaus were "seeing Nellie home" this sign was as welcome as today's "Flats Fixed." Like the harness maker's sign, identification of your merchandise for sale over the counter must be obvious, welcome and confidence inspiring. It should provide effective tie-up with advertising and sales promotion, it should be a guarantee of quality, and it should meet legal requirements.

Kaumagraph Dry Transfers*, by the manual or automatic touch of a hot iron, reproduce on your product any line design or lettering in one or two colors. Prestomark Labels (thermoplastic backed) can be beautifully lithographed in multicolor. Either one or both may be the economical, attractive method for your products' identification. Kaumagraph Embossed Seals may provide an aristocratic touch and Kaumagraph Creative Lithography for box wraps, labels and displays can complete your market dress-up.

While war requirements of necessity have first call on our production facilities, we can plan ahead with you now and perhaps adapt to your needs some of Kaumagraph's new war-tested identification methods.

Send for a Kaumagraph Identification Man today.

*Reg. U. S. Pat. Off. "Kaumagraphs" are made only by Kaumagraph Company

PRESTOMARKS
for economical, attractive, permanent labeling. The touch of a hot iron makes them stick for all time.

Identification Headquarters since 1902

KAUMAGRAPH

KAUMAGRAPH COMPANY • WILMINGTON 99, DELAWARE • EMPIRE STATE BUILDING, NEW YORK 1, N. Y. • REPRESENTATIVES IN PRINCIPAL TEXTILE CENTERS OF THE WORLD.

KINKS & SHORT CUTS
(Continued from page 184)

shelves onto each edge of the 3-in. band-iron uprights and use one tier of them for drills and the other for reamers of corresponding sizes. By welding on a top and bottom from the 3-in. material, the rack can be fastened upon a pivot to the ceiling and to the floor or workbench. This will permit swinging the rack around to the drills or reamers as desired. Each shelf should be marked with the size of the tool it holds.

If the construction of such a rack presents difficulties, the same purpose can be accomplished by drilling bolt holes through the ½-in. side of the angle iron and bolting the shelves to a wooden frame. *(K-350) S. J. Phillips, W. Gastonia, N. C.*

Buffing Wheels Last Longer

A little attention to the buffing and emery wheel at the beginning of the work week helps prolong the life of these wheels and makes grinding and buffing easier. The wheels should be removed and turned around to present a new working surface each week. This rotates the wheels in the opposite direction and prevents them from wearing on one side. *(K-363)*

Short Filling Bunch Built on Spinning Mule

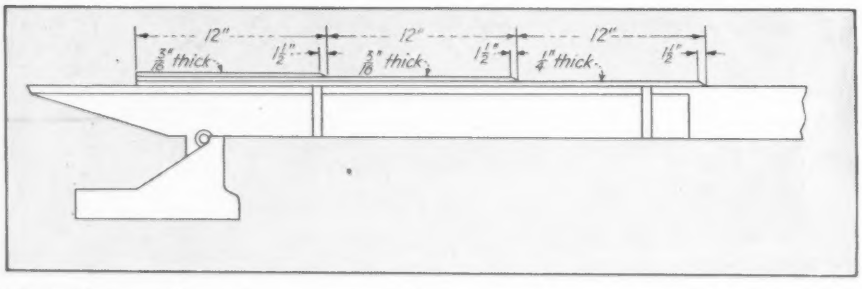
A weaving requirement for some new W-3 looms being installed called for an extra-short (¾ in.) filling bunch to be made on mule spinning frames. To put the required bunch on the filling bobbins, it was necessary to devise a builder rail.

The material used was one piece of flat iron ¼x1½x31 in., one piece $\frac{3}{16}$x1½x 19 in., and one piece $\frac{3}{16}$x1½x7 in.

These were placed one on top of the other until three progressively higher steps were attained as the mule advanced toward the roller beam.

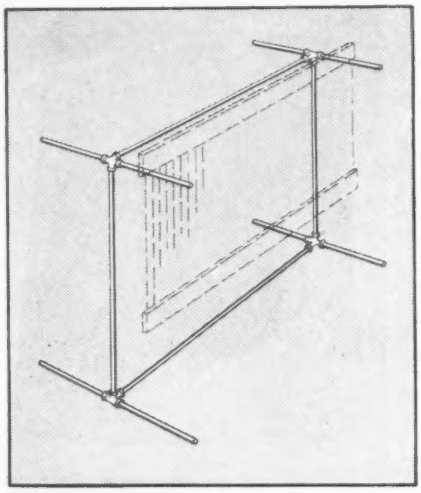
The pieces were brazed together, and short legs to fit over the sides of the builder rail were brazed onto them. These pieces were placed on the rail while the mule was up to the roller beam and after the builder had been wound up ready for doffing. The forward leg rested against the back of the builder shoe to prevent the buncher from sliding forward while the bunch was being built.

After the desired number of draws were put on the bobbin, the buncher was lifted off the rail to allow the frame to build the rest of the bobbin in the ordinary manner. The result was a smooth bunch with an oscillated effect which filled the needs of the weave room. *(K-256) F. E. Mettler, Lima, O.*



The builder passed over three progressively higher steps on the rail to build a ¾-in. bunch on the bobbin.

Loom-Harness Frame Can Be Made With Pipe

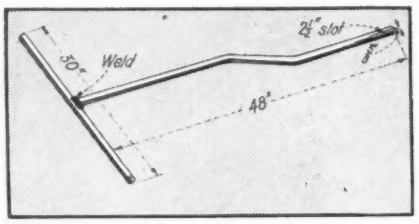


A frame for building or repairing a harness set or for storing harnesses may be made from a ¾-in. pipe, as shown above. The parts of the frame may be welded or screwed together by using regular pipe connections. (K-366) H. E. Wenrich, Berwick, Pa.

Wool Bales Are Opened With Leverage Tool

Removing the iron hoop around tightly pressed bales of wool, such as the 900-lb. bales from the Argentine, may be facilitated by the use of the tool shown in the accompanying sketch. The tool can be made from a scrap piece of 1-in. pipe. The dimensions are indicated in the sketch.

One side of the ⅜-in. slot at the end of the tool is pushed under an iron hoop, and the tool handle is turned rapidly back and forth, twisting the hoop. Because of the leverage of the handle, little effort is required for the twisting; and only two or three twists are needed to break the hoop. *(K-369) George A. Cookson, Cape Town, South Africa.*

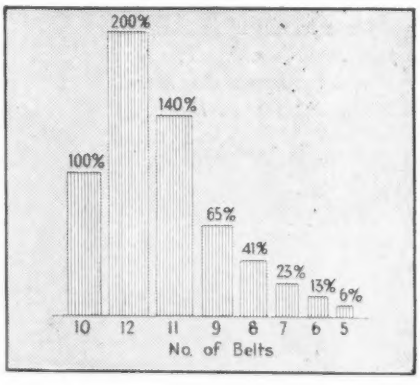


Two or three quick twists with the handle of the tool breaks the tie around a compressed bale of wool.

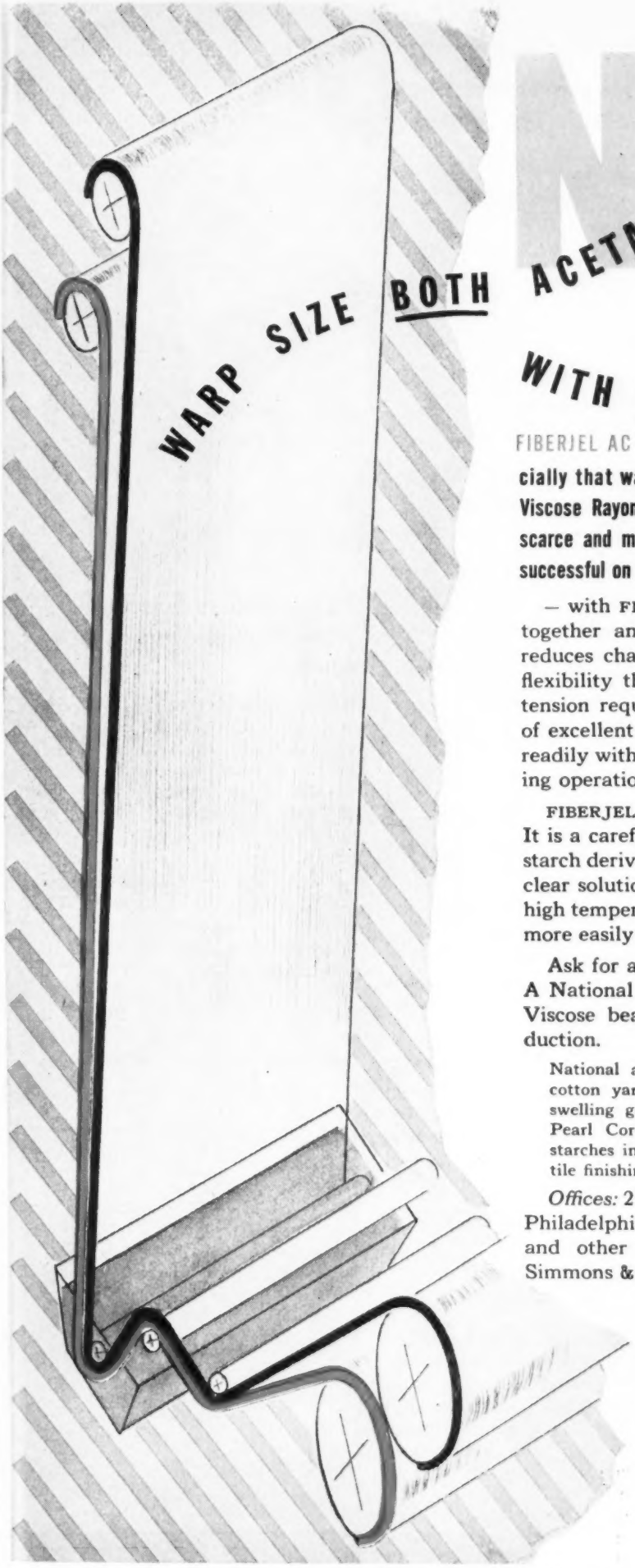
Overbelting Increases The Life of V-Belts

It is a common occurrence in many mills to allow drive belts to remain in operation after one or more of the individual V-belts has broken or worn out. Although the machine may continue to operate at approximately the same speed as it did with all the bands running, the life of the remaining belts will be shortened by the added strain placed on them.

According to information released



On the basis of 10 belts being the normal requirement, the above chart shows the percent life-expectancy from increasing and decreasing the number of V-belts in a drive.



NEW!

WARP SIZE BOTH ACETATE AND VISCOSE RAYON WITH ONE STARCH PRODUCT

FIBERJEL AC is the only starch derivative produced commercially that warp sizes both filament and spun Acetate and Viscose Rayon yarns. It was specifically developed to replace scarce and more expensive protein sizes. It has been proven successful on numerous fabric constructions.

— with FIBERJEL AC, the fibers are securely bound together and provided with a protective film that reduces chafing in the loom. The yarns are given a flexibility that helps to prevent breakage under the tension required to produce smooth, uniform fabrics of excellent appearance and handle. Desizing is done readily without hazard to subsequent dyeing or finishing operations.

FIBERJEL AC is the result of eight years' research. It is a carefully-refined, thin-cooking, white-powdered starch derivative which gelatinizes to a colorless, semi-clear solution. It is more uniform . . . less sensitive to high temperature breakdown . . . less expensive . . . and more easily obtained than protein warp sizes.

Ask for a trial FIBERJEL AC demonstration — NOW! A National technician can run off both Acetate and Viscose beams without upsetting your regular production.

National also produces: NALEX for sizing fine combed cotton yarns and worsted yarns; KOVAT, a cold water swelling gum for vat and discharge printing; HOOSIER Pearl Cornstarch; FLOJEL, uniform, thin boiling corn starches in all standard fluidities; and FIBERTEX for textile finishing.

Offices: 270 Madison Avenue, New York 16; Boston, Philadelphia, Chicago, Indianapolis, San Francisco, and other principal cities. In Canada: Meredith, Simmons & Co., Ltd.; Toronto and Montreal.

National
STARCH PRODUCTS

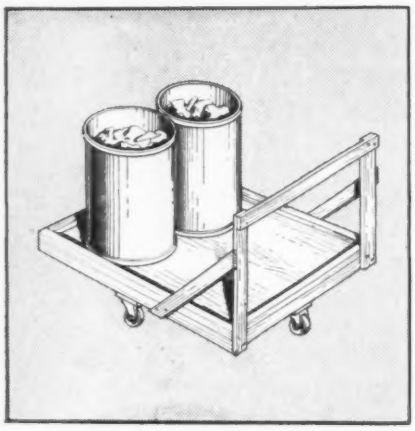
STARCHES — AND SPECIALTIES WITH EASILY DEMONSTRATED SUPERIORITY

KINKS & SHORT CUTS

(Continued from page 186)

by The Multiple V-Belt Drive Assn., a 60% reduction in belt life results from using four belts where five should be used. If the normal requirement for a drive is 10 belts, adding an extra belt will increase the life of all of them 40%; and running nine bands instead of the normal 10 will reduce the life of all of them 35%. In other words, 10% overbelting will add 40% in belt life, while 10% underbelting will result in a belt-life loss of 35%. (K-371)

Truck Simplifies Moving Waste Cans



The base of the truck can be made of plate steel or wood.

Removing waste cans from various locations about the plant can be done more easily and quickly by using a small truck for hauling the cans instead of dragging them.

Secure four wheels to a ¼-in. steel plate or to a 1-in. wooden base of a length and width to carry as many cans as desired. A bumper about ½ in. or 1 in. in height should be placed around the edges of the base to prevent the cans from sliding off. Attach a handle of wood or steel rods for pushing the truck. (K-364)

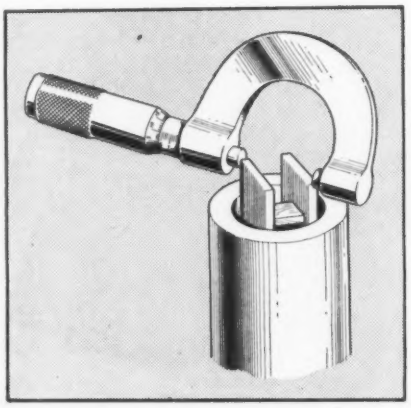
Defect in Microscope Removed by Washing

A microscope which had been in use several years developed a defect in the field of vision about four years ago. The defect gradually got worse and gave our technicians a lot of trouble. We eventually determined that the imperfections were confined to the top lens of the eye-piece. During a period of more than three years, we tried to clean the lens with chemicals in the laboratory, but the flaw steadily grew worse.

Several optical companies were contacted to see if they could polish the lens, but we were informed that it would be necessary to send the instrument back to the factory. They thought we might get it back in six months or a year.

The other day we washed the lens with *soap and water*; and when we put the eyepiece together again and looked at a smear through it, it was as clear as it had been the first time we used it, 23 years ago. (K-372).

Inside Measurement Made With Outside Micrometer

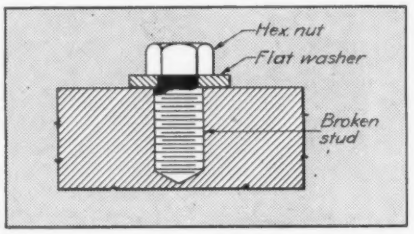


A roll was to be rebored for a larger diameter shaft, and at the time there was no inside micrometer available with which to check the bore. The following method was devised for measuring. Two pieces of flat steel were cut, inserted into the bore, and wedged with a piece of wood, as shown in the sketch. Measuring across the diagonally opposite corners of the two pieces gave the diameter of the bore. (K-370) L. Kasper, Philadelphia, Pa.

Broken Nuts Welded For Quick Removal

Broken stud which must be drilled and tapped out in the machine shop are a frequent source of trouble in all textile plants. In addition to consuming the machinist's time, the operation often damages the screw-hole threading so that a larger hole must be bored and threaded.

A simple way to cut down on the consumption of maintenance time and eliminate the ruined screw holes is illustrated. A flat washer is welded to the end of the broken stud, and a square or hex nut is welded to the washer. Only a drop or two of molten metal from the welding wire should be required for each welding. After cooling the metal, remove the stud by applying a wrench to the welded nut head. (K-353) *The Lincoln Electric Co.*

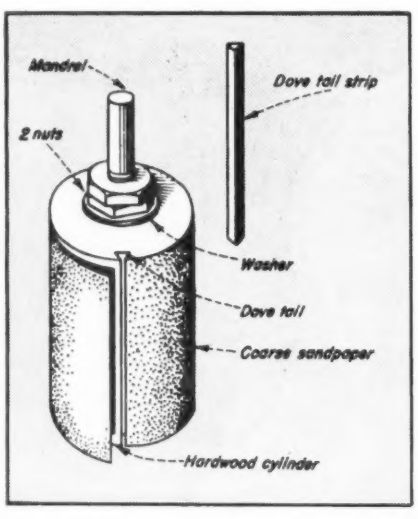


The purpose of the washer is to insure a level swing of the wrench when removing the nut head.

Picker Sticks Ground With "Home-Made" Abraser

Due to the shortage of picker sticks, it is often necessary to purchase lots from various manufacturers. This results in assorted sizes, and it is sometimes necessary to cut down the width or thickness of a stick to make it fit into the lay-end slot or the picker blocks.

One of the best methods for doing this is to make use of a high-speed sander. The sander can be made as follows: Cut a length of 4 in. from a 3-in. block and drill a ½-in. hole through the center. Into this hole insert a ½-in. bolt 6 in. long and countersink the bolt head flush with the bottom of the block. After the bolt,



The sander is made from a 3 x 4-in. block of wood.

REVOLUTIONARY NEW *Fybrols

PROVED IN MILL AFTER MILL!

Sonneborn Research Scores Again with New Wool and Worsted Oils Featuring Amazing Lubricating, Wetting and Detergent Properties

FYBROL 1115... A Great New WOOL Oil

FYBROL 1115L... A Great New WORSTED Oil

SOLUBLE IN HOT WATER... The new FYBROLS form stable, opalescent solutions — NOT emulsions—which do not break at room temperature or when diluted with cold water.

UNIFORM PENETRATION OF FIBRE... Wool fibre does not exert selective adsorption on the new FYBROLS. Therefore, the oil is uniformly distributed on the fibre throughout the various processing steps.

FULL WITHOUT SOAP... Addition of small amount of soda ash permits utilization of residual FYBROL as soap.

SELF-SCOURING... Inherent detergent properties permit ultimate removal of the oil by simple water rinse.

*Patent Pending

Write or wire Dept. TW9 for complete technical data, including results of trial mill runs, on these new FYBROL Wool and Worsted Oils. Orders promptly filled.

Textile Chemicals Division

L. SONNEBORN SONS, INC.

88 Lexington Avenue, New York 16, N. Y.

Plant and Laboratories: Nutley, N. J.

Refineries: Petrolia and Franklin, Pa.

which now becomes a mandrel, is in place, lock it tight with a washer and two nuts.

Place the block in a lathe and round it to 3 in. in diameter. Cut a dovetail slot lengthwise the block and fashion a strip of wood to fit into the dovetail to hold the abrasive. Wrap the block with a 4-in. width of a coated abrasive so that the ends of the abrasive fit into the slot, and insert the strip of wood to hold it. The completed sander, when run at a high speed in a drill press, quickly shapes a picker stick to the required size. *(K-344) J. L. Bove, Hazleton, Pa.*

Shuttle-Box Cells Are Cleaned With Mop

When a loom is put on a new weave which requires the use of an extra shuttle-box cell, the new cell usually needs cleaning to remove the lint, loose filling yarn, and dirt which have accumulated in the cell during the period of idleness.

It is hardly worth while to tear down the cell to clean it. The next best thing is to make up a special cleaning tool which I call a mop. It is not difficult to make. The exact dimensions and angle of bend will vary somewhat, but the base rod can be sufficiently light so that it can be rebent by hand, if necessary.

Bend a length of a small steel rod into an *L* shape and cover the longer length with felt. The felt-covered part should be long enough to reach the length of the box cell. Loose dirt and yarn can be easily removed. *(K-365)*

Drill Press Useful for Polishing Loop Pickers

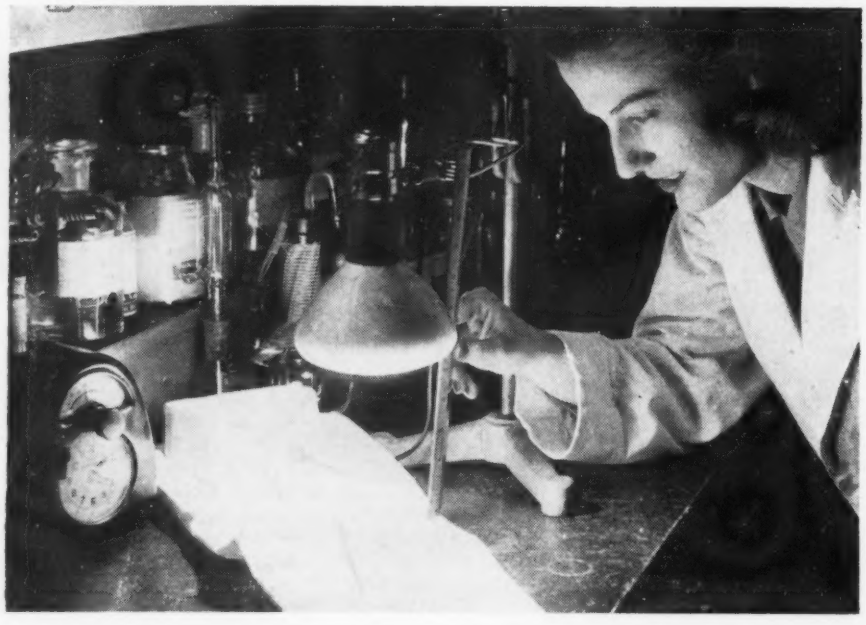
When having trouble with pull-ins on spun yarns and other filling yarns that have a tendency to catch on rough loop pickers, the trouble can often be eliminated by polishing the picker.

The sketch shows one method of polishing, using a chuck brush made from cotton, rayon, or other headings discarded in the twisting room. Usually, these woven headings when cut free from the retwisted harness are sold as waste. They make excellent material for polishing pads, etc.

When making a chuck brush shown, cut the material into 2½-in.-diameter discs, placing a ¼-in. hole through center. Use a ¼-in.-diameter bolt approximately 6 in. in length for the mandrel, but cut off the bolt head. Place a nut and a 2-in. washer on the bolt. Sufficient cloth discs are then placed on the bolt to form a padded disc about ½ in. in thickness when compressed. Place over this a second 2-in. washer, followed by a nut for compressing, and lock the pad in place. The chuck brush is trimmed to a nearly perfect roundness, 2½ in. in diameter, the cloth extending ¼ in. past the washers.

Centrifugal force will keep the many layers of soft material in a compact polishing surface. Swabbing a little shellac over the surface and polishing the picker as shown will give a highly-polished picker surface, preventing jerk-ins or pull-ins. *(K-193)*

Sunlamp Eliminates Scorch Marks on Fabrics



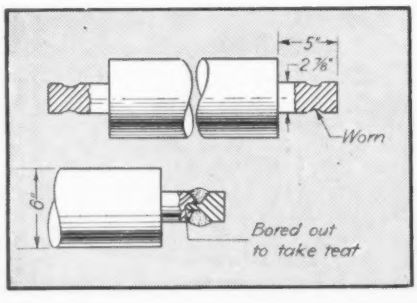
According to engineers of the Westinghouse Lamp Division, Bloomfield, N. J., a large shirt manufacturer is using a self-contained electric sunlamp to eliminate scorch marks. It is believed that this lamp may also be used by mills to remove similar marks from fabrics. It is necessary only to wet the spot with water and place the lamp at a distance of five inches from the fabric. Exposure is for ten minutes. The scorch then disappears, and it is believed that the long-wave ultraviolet rays generated by the lamp administer a water transfusion to the parched fibers of the scorched portion. (K-373)

Arc Welding Restores Worn Shaft To Service

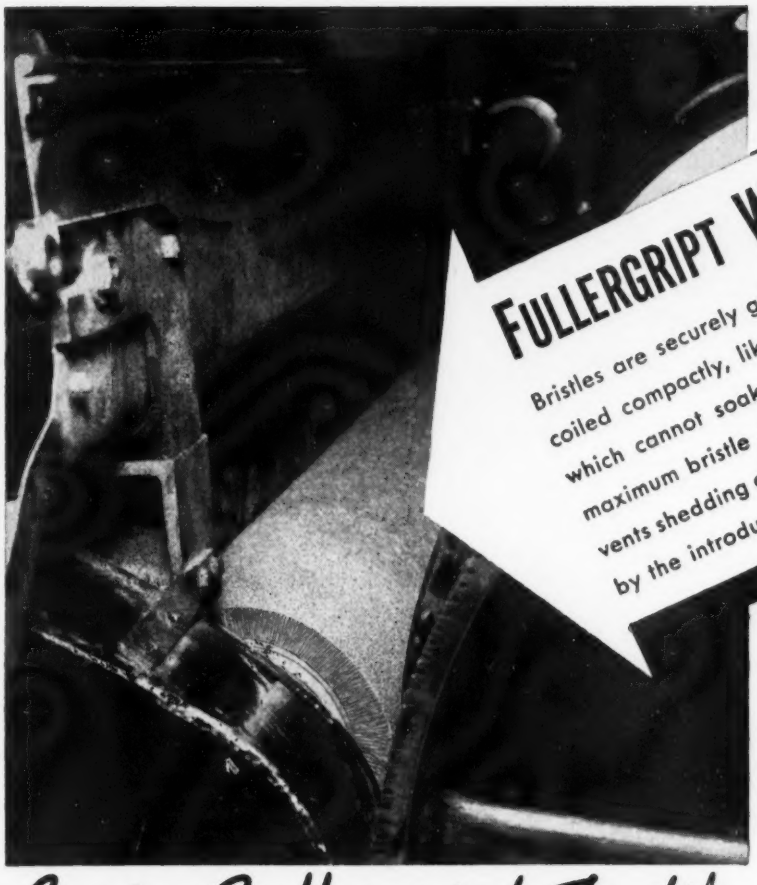
An effective way of welding a worn shaft so that it may be used again is illustrated in the sketch. The repair of this shaft was done with an arc welder.

The worn end of the shaft was sawed off and discarded. A piece of round steel of the same diameter of the shaft—in this case, 2⅞ in.—was machined with a 1-in. teat on the end; and the area between the teat and the perimeter of the shaft was beveled to take a vee block. The piece of shaft remaining on the roll was machined in like manner, and a hole was bored in the center of the shaft for the insertion of the teat.

With the teat fitted into the hole and vee blocks filling the V gap in the shaft, the arc welder was applied. A final machining dressed the welded shaft, and it was restored to duty. *(K-352) The Lincoln Electric Co.*



Teat on replacement part was fitted into a hole bored in the shaft piece.



FULLERGRIPT WORSTED-CARD BRUSHES

Bristles are securely gript in rust resisting metal. This strip is then coiled compactly, like fillet card clothing, around a metal core, which cannot soak up oil, crack or split. This construction gives maximum bristle density, longest life and lowest cost; it also prevents shedding of bristles and the consequent ruining of good stock by the introduction of highly objectionable "foreign matter."

Again Fullergript Textile Brushes do a Better Job at Lower cost!

Here is a new success story — to add to the ones on Fullergript cotton-card brushes, Fullergript thread-dresser brushes, Fullergript dabbing brushes and other Fullergript textile brushes.

FULLERGRIPT WORSTED-CARD BRUSHES

contribute to this impressive demonstration. Its tightly packed bristles push the wool — all the wool — down into the pins of the Morel clothing, leaving the burrs on top of the pins, free of fiber, ready for easy removal.

Fullergript brushes are proving helpful in three ways on worsted cards — as feed-roll brushes to start the wool properly in the teeth of the first lickerin, as Morel brushes to disentangle the burrs from the wool, and as Morel transfer brushes to carry the wool to the Morel roll and disentangle the burrs at the same time.

In all these applications the great density of the Fullergript bristles insures that the wool will be pushed into the clothing — not back into the brush! This means the brushes will not clog up rapidly, lose their efficiency and require cleaning — always a difficult, time-consuming job.

YES, its a new success story. Do you want to hear the others — on cotton-card brushes, for example? If so, write us and we'll gladly relate them to you.

Do You Want To Remove Burrs?

Look at the quantities pouring out of this worsted-card in a prominent New England combing plant.

FULLERGRIPT — *better work at lower cost*

The FULLER BRUSH *Company*

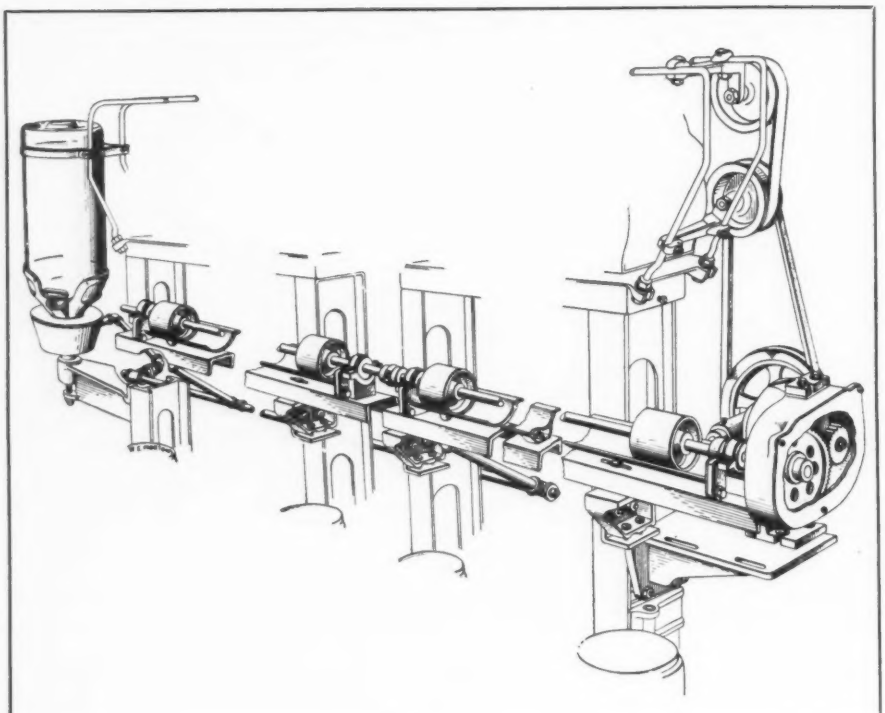
INDUSTRIAL DIVISION, DEPT. 8C

3594 MAIN STREET - - - HARTFORD, CONN.

THIS IS NO. 53 OF A SERIES ON

GETTING THE MOST FROM WINDING

Information about winding designed to show improvements in winding equipment and new ideas in the winding operation



FRONT-LINE EMULSION with Semi-Circular Trough
(No. 50 Winding Machine)

To meet the increased demand for oiling synthetic yarns — particularly rayon and nylon — an improved No. 50 Front-Line Emulsion Attachment has been developed, incorporating a semi-circular trough.

The entire machine has been designed to keep tension at a minimum. The yarn travels in nearly a straight line from supply tube, up through an auxiliary tension guide and past the Emulsion Roll. Yarn contact points are few to minimize friction.

The Emulsion Roll is designed and mounted so that it will always stay in alignment even if jarred by a severe blow. The trough is attached rigidly to a channel iron. The roll, rotating within the trough, is supported by oilless wood bearings which totally surround the shaft at each end and by an adjustable semi-circular one at the center. The end bearings are held in place by clamps.

The advantage of the semi-circular trough is that, with the smaller reservoir, there is less volume of oil subject to collection of dust or contamination. The oil is kept at a constant level by means of a leveling attachment, which may be located at either end of the row and from which the oil is delivered to the trough by a pipe running along the back of the machines. To drain the oil, a plug at either end of the supply pipe is removed.

The amount of oil pickup is easily and definitely controlled by varying the speed at which the roll turns and by the arc of contact which the yarn makes with the Roll which should always be maintained at 5°. Roll speeds from ½ a turn to 7½ turns per minute are available by changing the two gears which drive the Emulsion Roll, and which are totally enclosed within a gear housing. Only one set of two gears for each speed is necessary.

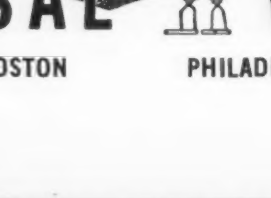
The attachment is powered by means of a V-belt Positive Drive which is driven directly from the lower End Idler Pulley on the Straight-Belt Drive. Flexible couplings between roll shafts permit coupling up to six machines together, in which case the V-belt drive usually is placed at the end of a row of machines. However, it is possible to place it in the center of the row or between any two pairs of machines.

The trough should be cleaned every three months. This is easily accomplished by removing the Bearing Clamps and the Change Gear on the Emulsion Roll Shaft. The entire Roll Shaft can then be lifted from the machines. If only one section is to be removed, it can be disconnected at the Flexible Coupling and taken out without disturbing the balance of the Shaft.

*Reg. U. S. Pat. Off.

See our Catalog in TEXTILE WORLD YEARBOOK 23.5.12

"THERE'S A UNIVERSAL WINDER FOR EVERY TEXTILE NEED"



UNIVERSAL WINDING COMPANY

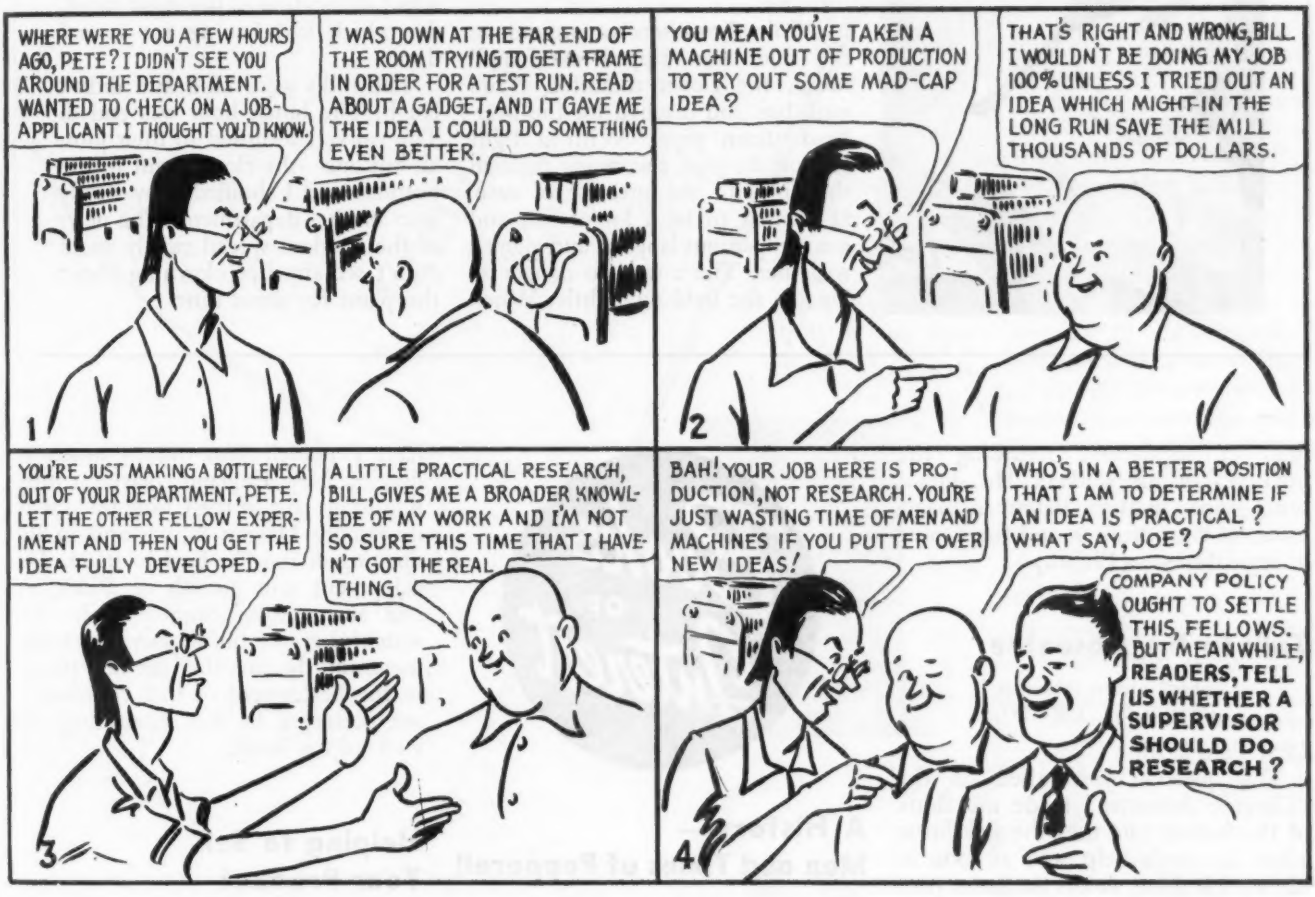
PROVIDENCE BOSTON PHILADELPHIA UTICA CHARLOTTE ATLANTA

LETTERS to Pete & Bill, discussing material in this department, are paid for when published. Suggestions for the Pete & Bill dialogue will also be paid for if used. If these pages interest you, contribute something to interest others. Address PETE & BILL, Textile World, 330 West 42nd St., New York 18, N. Y.

Pete & Bill

Production or Research

Should a supervisor indulge in experimentation or restrict himself solely to carrying out production schedules?


WHERE WERE YOU A FEW HOURS AGO, PETE? I DIDN'T SEE YOU AROUND THE DEPARTMENT. WANTED TO CHECK ON A JOB-APPLICANT I THOUGHT YOU'D KNOW.
I WAS DOWN AT THE FAR END OF THE ROOM TRYING TO GET A FRAME IN ORDER FOR A TEST RUN. READ ABOUT A GADGET, AND IT GAVE ME THE IDEA I COULD DO SOMETHING EVEN BETTER.
1
YOU MEAN YOU'VE TAKEN A MACHINE OUT OF PRODUCTION TO TRY OUT SOME MAD-CAP IDEA?
THAT'S RIGHT AND WRONG, BILL. I WOULDN'T BE DOING MY JOB 100% UNLESS I TRIED OUT AN IDEA WHICH MIGHT IN THE LONG RUN SAVE THE MILL THOUSANDS OF DOLLARS.
2
YOU'RE JUST MAKING A BOTTLENECK OUT OF YOUR DEPARTMENT, PETE. LET THE OTHER FELLOW EXPERIMENT AND THEN YOU GET THE IDEA FULLY DEVELOPED.
A LITTLE PRACTICAL RESEARCH, BILL, GIVES ME A BROADER KNOWLEDGE OF MY WORK AND I'M NOT SO SURE THIS TIME THAT I HAVEN'T GOT THE REAL THING.
3
BAH! YOUR JOB HERE IS PRODUCTION, NOT RESEARCH. YOU'RE JUST WASTING TIME OF MEN AND MACHINES IF YOU PUTTER OVER NEW IDEAS!
WHO'S IN A BETTER POSITION THAT I AM TO DETERMINE IF AN IDEA IS PRACTICAL? WHAT SAY, JOE?
COMPANY POLICY OUGHT TO SETTLE THIS, FELLOWS. BUT MEANWHILE, READERS, TELL US WHETHER A SUPERVISOR SHOULD DO RESEARCH?
4

Letters From Readers

Overseer Should Train Himself to Teach

"Overseer vs. Outsider as Teacher"
(Pete & Bill, Mar. 1945)

Dear Pete & Bill:

I am much interested in your discussion of this subject. Both of you made some good points, and it is difficult to take a definite stand on this question.

Having sent my own son to college I must admit that I am inclined to favor the professionals as teachers, yet, for vocational classes, some of the best instructors I know have been overseers or other supervisors from the mills.

If Bill is willing to take a little training himself, and will learn something about teaching methods, vocational class reports, and the text books available, then with his long experience in the mill added to all this he should be able to make himself an ideal vocational class instructor. (PB602)

Privileges Must Be Uniform

"Special or Uniform Privileges"
(Pete & Bill, July, 1945)

Dear Pete & Bill:

With reference to privilege differences between departments having piece-work-pay basis or hourly-pay basis, it is my opinion that there should be no difference, regardless of the wage payment method.

The question of privileges is one of management policy, thus it is not the foreman's responsibility. It should be remembered that management is paying for the work done and reserves the right to grant privileges to each department head, who in turn should delegate them to the respective subordinates, continuing down the line.

If one department head grants certain privileges which another may or may not be able to grant, fertile seeds are sown for discontent among the workers. To avoid such possibilities, management again must take the initiative of granting privileges. It is not part of a foreman's job to make

MEMORIES OF OLD MAN CARELESSNESS—By Martha B. Pittenger

No. 30—Free Clowning

Let me tell you about the girl who did a bit of free clowning, though she paid a mighty dear penny for having been one. Sure! the folks laughted at her, since it was during lunch hour in the mill and the machinery was stopped and it seemed fair enough to have a little fun.

While the others sat around on the floor and tipped over quill boxes, the clown mounted a full quill box and reached for the overhead steam pipe. With a tight grip on the pipe, she swung through the air with the greatest of ease. It seemed to be a lot of fun and her companions laughed and giggled with her. There was no danger so long as she held on tightly. When she decided to stop swinging, she attempted to gain her balance on top of the quills as she let go of the pipe with her hands. All would have been well if the quill box had caught her, but the quill box didn't stay put. It rolled from beneath her and so she took a nasty fall—with a bad dislocation of her right shoulder which laid her up for several days.

The folks were kind and didn't laugh. The lunch hour was ended. The workers returned to their jobs; all but one—the clown went to the hospital, and I shuffled away slowly into another department. The news of the accident spread swiftly and I didn't see any free clowning about the plant for some time.

rules or regulations regarding the privileges of his workers. He should bring such matters before management for consideration and the issuing of regulations. (PB702)

Talk to the Absentee

"The Chronic Absentee"
(Pete & Bill, Jan. 1945)

Dear Pete & Bill:

The question you raised on the "Chronic Absentee" made me think of the farmer who uses the sick horse when he needs help, and as soon as the work is done, shoots the horse (not that I know of such a farmer). I believe that chronic absenteeism stems from a social or psychological maladjustment. Instead of waiting until the pressure is off to fire the chronic absentee, you should recognize the problem as a current one and try to remedy the situation at once. Bill should speak to the absentee, find out what is causing the problem, and try to remedy the situation. In these war years, most of the workers have been contributing a great deal, they may be tired, and feel that one day away from the job won't matter. Of course it did matter more in wartime than it does now. The absentee should be told how much the nation as a whole loses by his one day off, and I am certain that in most cases he will stop taking the "holiday". (PB604)

Books of Interest

A History—Men and Times of Pepperell

THE MEN AND TIMES OF PEPPERELL, by Dane Yorke; Pepperell Mfg. Co., 160 State St., Boston; 116 pages; limited circulation.

This book weaves a dramatic account of the first hundred years of Pepperell Mfg. Co., since its incorporation on Feb. 16, 1844. Its first plant was built at the site of the waterfall on the Saco River at Biddeford, Me., by Samuel Batchelder, an American textile pioneer, who also built the Hamilton Mill at Lowell. The development of the Pepperell units at Biddeford is traced and also the growth of the company under the guidance of such men as Francis Skinner, William Dwight, William P. Haines, Robert McArthur, William Amory, and Russell H. Leonard.

This company, named for Sir William Pepperell who did so much to develop New England, played a most important part in the China trade with its famous Dragon fabrics and in the opening of the Far East to trade. Development and growth of Biddeford and surrounding country under the watchful eye of the Pepperell management and the part that the mill played in the betterment of that community are portrayed in this interesting and well-written book.

Helping to Sell Your Product

SELLING WITH COLOR, by Faber Birren; McGraw-Hill Book Co., 330 West 42nd St., New York 18; $2.50.

Designers, stylists, sales and merchandising executives of the textile industry have in this book a practical guide to color selection and its influence on sales. The study of color is treated as a business science, and its mysteries analyzed and measured according to extensive sales records and research studies. The focus of the book is aimed at the mass consuming public and their reaction to color. It has been stated that color is one of the largest single factors considered in buyer selection, and as such represents a tremendous potential merchandising factor if used properly.

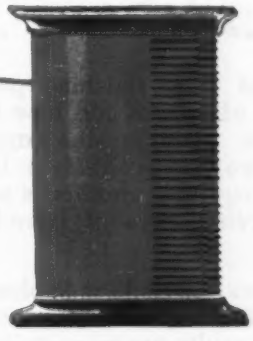
starting point for brand-new fabrics

Wearability, cleanability, beauty and color . . . in a host of salable new fabrics! That's the promise of Saran, Dow's new basic material for the textile industry.

If it's exceptional durability you're looking for, Saran has it. Fabrics woven of Saran monofilaments show an almost unbelievable resistance to scuffing and abrasion. In a vast variety of weaves, they'll lead long and useful lives as seat covers, draperies, luggage coverings . . . wherever wear is hardest.

There's beauty in Saran, too . . . bright and shining color that stays undimmed as long as the fabric lasts . . . emerges from dust and grime at the whisk of a damp cloth. That same damp cloth is all that's needed to banish ink, perspiration, and grease stains, leaving the fabric lustrous and unharmed. And sunshine, moisture, and storage hold no terrors for this cheerful material.

It's time to get acquainted with this new Dow development! Just drop us a note for your introduction.



THE DOW CHEMICAL COMPANY
MIDLAND, MICHIGAN

New York • Boston • Philadelphia • Washington
Cleveland • Detroit • Chicago • St. Louis • Houston
San Francisco • Los Angeles • Seattle

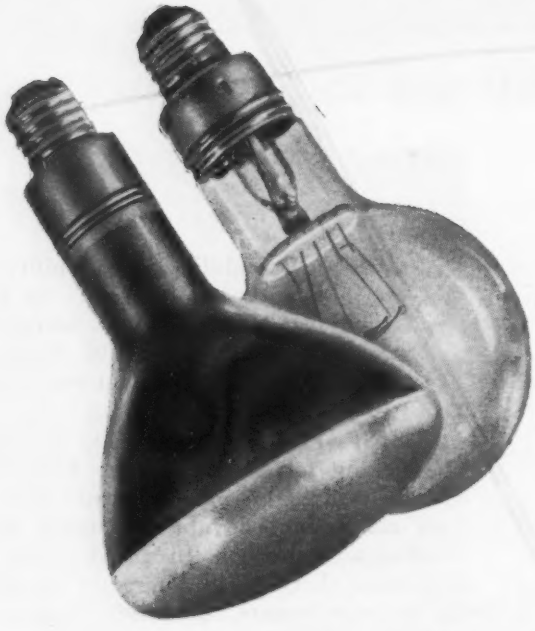
SARAN

AVAILABLE THROUGH LICENSEES

Saran molding compounds, produced by Dow, are extruded as monofilaments or thread by skilled licensees located throughout the country. All of them are in a position to give you details about Saran and its possibilities. These licensees include:

- ★ Allied Plastics Co., Los Angeles, California
- ★ Firestone Tire & Rubber Company, Akron, Ohio
- ★ Hodgman Rubber Company, Framingham, Mass.
- ★ Irvington Varnish & Insulator Co., Irvington, N. J.
- ★ National Plastics Products Co., Odenton, Md.
- ★ Visking Corporation, Chicago, Illinois (merchandised under the name Permalon)
- ★ Western Felt Works, Chicago, Illinois

DOW PLASTICS



FINISH FABRICS FASTER BETTER with WABASH BIRDSEYE INFRA-RED HEAT LAMPS . . .

Sanforizing and other finishing processes that involve drying of fabrics can now be done better and faster through the application of Wabash-Birdseye Infra-red Heat Lamps—over 80% of the energy they radiate is usable, deep-penetrating, drying rays of Infra-Red radiant heat!

Textile engineers report that Wabash-equipped drying units often speed up processing time 50% to 100%. Results are more uniform; maintenance is easy and economical.

Wabash-Birdseye Infra-red Heat Lamps are standard for most Infra-Red tunnels, ovens, and other production line installations. In adapting your equipment to achieve the really dramatic results possible with Infra-Red, remember that Infra-Red heating is a science; and, *for maximum efficiency, Wabash-Birdseye Lamps should be used with scientifically engineered equipment. We will gladly furnish names of manufacturers of such equipment.*

WABASH APPLIANCE CORPORATION

345 Carroll Street, Brooklyn 31, N. Y.

WABASH-BIRDSEYE

First in INFRA-RED

Round Table

FOR EXCHANGE OF IDEAS

The Round Table is designed to supply a meeting place where mill men can discuss problems among themselves. It is open to all readers for discussion of subjects relating to mill mangement and operation. Names of contributors to the Round Table will be held confidential if so requested, but sign contributions with your real name and address as evidence of good faith and to permit payment for items published. Address contributions to: Editor Round Table, Textile World, 330 West 42nd St., New York 18, N. Y.

Mills Should Know Their Indirect Costs

At present, indirect cost is an evil that has to be watched because of so much inexperienced help; and I have been wondering how overseers of small mills which have no cost department keep up with their indirect costs.

A mill at which I worked in the United States used a chart for determining cost and cost allowance. The chart contained the following information:

Total number frames
Number frames running
Percent of total frames running
Job division
Rate of pay
Cost allowance (employees required when all frames are running)
Percent cost allowance (based on frames running)
Employees working
Over or under

First, it is necessary for the superintendent or the person who looks after the cost to give the overseer a list of the indirect labor allowed in his department when all the machinery is in production. The overseer will then break this down by job division and the rate paid for each job. Under

The Quality of Boger and Crawford knitting yarn is guaranteed—the highest tribute we can pay it.
Signed . . . . . .
Fredaricka Boger

DOES YOUR KNITTING YARN HAVE *Vitamin* Q ?

Vitamin "Q" is *Quality*. And, as you know, good yarn *must* have Quality. With Boger and Crawford, Quality in knitting yarn is foremost—even above its production cost to us!

To be sure, the cost of making this yarn is high. Research—testing—production—all are thorough and expensive — but worthwhile! Because out of it all you get a *better* knitting yarn steeped with Quality. Yes, Vitamin "Q" is essential in knitting yarn!

BOGER & CRAWFORD

MERCERIZED YARNS

PHILADELPHIA, PA. • UTICA, N. Y. • BOGER CITY, N. C. • BOSTON, MASS. • CHICAGO, ILL.

Air Express gets New Truck in Production weeks Faster

When the Army orders new equipment — a truck, for instance — things move at breakneck speed. Blueprints, specifications and material specimens shuttle back and forth. Then come tools, jigs, dies. And it's mostly done at 3-mile-a-minute speed via Air Express.

Getting peacetime civilian products to market will also have the same kind of urgency. There's not only competition to meet but payrolls and overhead, too. Air Express is a money-saver because it's a time-saver. It is one of the most versatile of all industrial tools. It will pay you to investigate its use and economy in your business — whatever business you're in.

Specify Air Express-a Good Business Buy

Shipments travel at a speed of three miles a minute between principal U. S. towns and cities, with cost including special pick-up and delivery. Same-day delivery between many airport towns and cities. Rapid air-rail service to 23,000 off-airline points in the United States. Direct service to scores of foreign countries.

AIR MILES	2 lbs.	5 lbs.	10 lbs.	25 lbs.
250	$1.04	$1.25	$1.57	$2.63
500	$1.11	$1.52	$2.19	$4.38
1000	$1.26	$2.19	$3.74	$8.75
2500	$1.68	$4.20	$8.40	$21.00

AIR EXPRESS

AIR EXPRESS

GETS THERE FIRST

Write Today for interesting "Map of Postwar Town" picturing advantages of Air Express to community, business and industry. Air Express Division, Railway Express Agency, 230 Park Avenue, New York 17. Or ask for it at any Airline or Express office.

Phone AIR EXPRESS DIVISION, RAILWAY EXPRESS AGENCY
Representing the **AIRLINES** of the United States

cost allowance he will list the number of persons allowed on each job. The total number of frames in the department and the number of frames actually running are listed.

Calculate the percentage of the job running by dividing the total number of machines into the number of machines running. The percentage allowance, which is the percent of total machines running multiplied by the number of persons allowed for the job, is listed in its proper column. In the column for employees working, list the number of people working on each job. The difference between this column and the column for percentage allowance is the number over or under on the job.

One objection to this system is that the calculations often result in a fraction of one worker. When this occurs, the overseer can operate according to the schedule by sending out one worker a few hours in the shift. *R-172, Roy S. Michael, Lima, Peru.*

Carding Proposal Would Increase Neps

In reply to *R-166* (TEXTILE WORLD, July), I should like to point out some of the factors which influence neps in a card web as determined by tests made public in the April issue of *Textile Research Journal.*

Of the four cottons tested, the two which were nearest comparable to the cotton used by *R-166* were as follows (fiber strength determined by Chandler method):

A—1 in., S.L.M., 94,000 lb.
B—1 in., S.L.M., 65,000 lb.

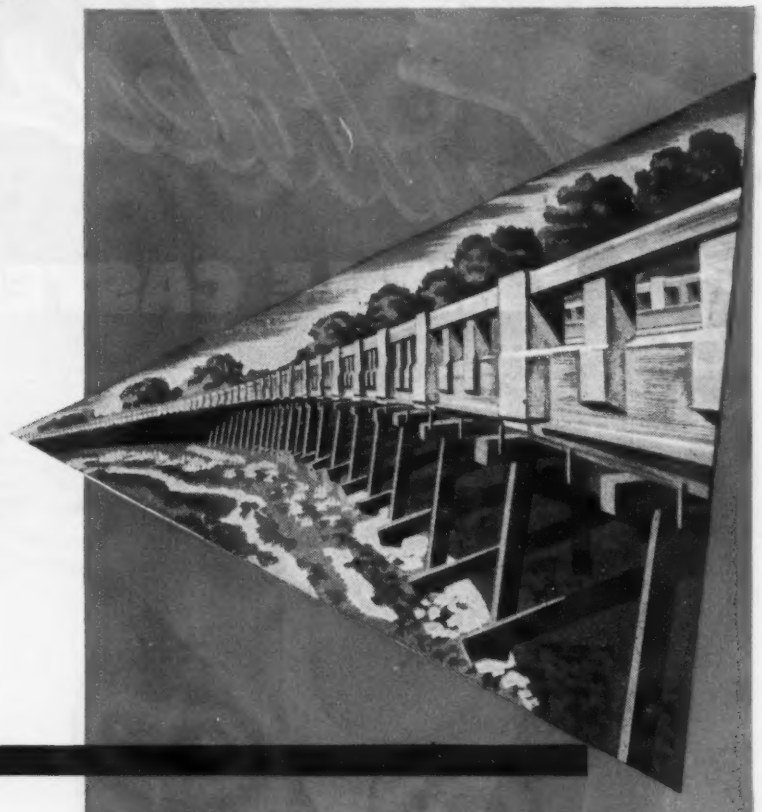
The greatest single factor influencing the number of neps in the card web was the cotton itself. When carding 16.5 lb. per hr. by stepping up the over-all speed of the card, *A* cotton had 6.9 neps per grain of web, against 29.3 neps per grain in *B* cotton. In other words, carding two 1-in., S.L.M. cottons under the same conditions resulted in 4¼ times as many neps in one cotton as in the other.

The writer of *R-166* asked what would be the effect upon neps of slowing the doffer speed 20% and increasing the over-all speed to get approximately the same production (17 lb. per hr.).

Although this specific set-up was not tested, the following calculations may be made from the published test results. The tests selected here apply only to *A* cotton, but it is safe to assume that an approximation of the results for *B* cotton may be arrived at

ONE OF 19 DOW CHEMICALS USED BY THE TEXTILE INDUSTRY

50,000,000,000 termites can be wrong!



Fifty billion termites on the loose . . . a real menace to the lumber industry! There are at least that many of these pests throughout the nation, looking for a meal from anything that's made of wood.

Preserving wood from termites and fungi looked like another job for Dowicide. Dow technicians tackled the problem . . . submitted their findings to the lumber industry. In actual practice, it was found that Dowicide-treated lumber resisted termites, rot, and mold for unusually long periods of time . . . stayed clean, was easily handled, non-bleeding, paintable.

Today there's a longer life in store for many wood products—thanks to Dowicide. The range of Dowicide treatments now available offers simple, economical protection of wood from freshly cut logs to finished product.

Not only in the lumber industry, but in many another major field as well . . . paper, paints, leather, textiles . . . Dowicides are providing efficient protection against mold and decay. Bring *your* preservative problem to Dow! We'll be glad to help work out the Dowicide defense that's best for you.

THE DOW CHEMICAL COMPANY

MIDLAND, MICHIGAN

New York • Boston • Philadelphia • Washington • Cleveland • Detroit
Chicago • St. Louis • Houston • San Francisco • Los Angeles • Seattle

Dowicide

Germicides and fungicides

DOW

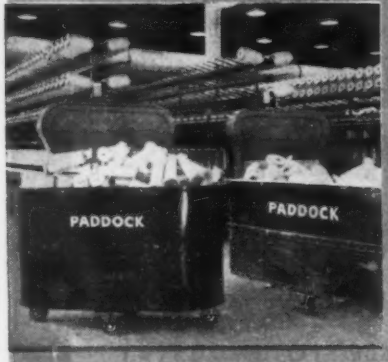
CHEMICALS

INDISPENSABLE TO INDUSTRY

Faultless TEXTILE CASTERS

500 Series Truck Caster with Faultless Thread Guard on Plaskite Wheel. Especially designed for use on Doffing and Roving Trucks.

Streamlined Battery Fillers Trucks operate in narrowest of aisles on Faultless Casters. View in Weave Room of prominent mill.



Faultless equipped streamlined trucks in Spinning Room of a leading tire cord maker.

SPEED UP PRODUCTION AT LESS COST PER MILE

For that extra margin of output from machines and manpower, speed up supplies on snag-proof Faultless Casters. Their composition wheels are fitted with especially designed Thread Guards that prevent ravelings wedging around wheel hubs and axles—avoid breakdowns—save cleaning labor.

Faultless Caster frames are interchangeable and fit identical, standardized bolt holes—another substantial labor saver when making replacements.

Plaskite Caster Wheels are easier on floors, do not chip, corrode or mar, are quiet, immune to water and cleaning solutions. So, for that extra margin of mill output, let Faultless Textile Casters carry the load.

Write for Textile Catalog—just off the press.

FAULTLESS CASTER CORPORATION, EVANSVILLE 7, IND. • CANADA: STRATFORD, ONT.

Branches in Boston, New York, Chicago, High Point, St. Louis, Detroit, Los Angeles. In other cities consult your phone directory.

by multiplying nep results for A cotton by 4¼.

I—Card production was varied by changing only the doffer speed:

Lb. per hr.	Neps per gr.
16.9	5.2
14.5	5.3
12.1	4.4

A 20% reduction of doffer speed, as mentioned by *R-166*, would result in a production of 13.5 lb. per hr. This falls about halfway between 14.5 and 12.1 and theoretically should result in neps halfway between 5.3 and 4.4, or 4.8 neps per grain. This represents a decrease of 7.69%.

II—Raising production back to 16.5 lb. per hr. by increasing the over-all speed showed the following results:

Lb. per hr.	Neps per gr.
12.1	4.4
14.3	5.7
16.5	6.9

Again accepting a production halfway between the two lower figures would result in 13.2 lb. per hr., with a nep count of 5.0—an increase of 1.9 neps per grain; or 27.54%.

Subtracting the 7.69% decrease in Step I from the 27.54% increase in Step II yields a net increase in neps per grain of 19.85%.

The indication is that slowing the doffer does not compensate for increasing the over-all speed of the card, and calculations based on exhaustive related tests seem to indicate that an increase of about 20% in neps would result from *R-166*'s proposal. *R-173*

Report Received on Belgium's Flax Crop

Mr. Michel J. Van Lede reports in a letter received from Courtrai:

The Crop: The weather is still good and the flax crop looks well. The early sown flax looks splendid, but late sowings—second half of April and early May—have not come on well but may improve later. On the whole, we expect a total production of 50,000 hectares in France, Belgium, and Holland, of which five-eighths promises to be good flax.

Markets: These continue quiet. The small allotments for June, 400 tons in all, are nearly covered by French and Belgian spinners, but not by the British Ministry of Supply which, so far, has bought only some 1300 bales out of the 3225 bales allotted to them. Scutchers complain that they are unable to find buyers for the flax they put up for sale, and this is true because they only offer for sale the lowest qualities, keeping the better

There's a WRIGHT WAY to handle materials

In handling materials, a lot of money can be wasted—or saved. The **WRIGHT** way *saves*.

In the Wright line there is a hoist for every job. Wright Improved High Speed Hoist, Wright Screw Hoist, Wright Differential Hoist, Wright Speedway Electric, Wright Trolleys, Wright Jib and Traveling Cranes—every one of them designed and built to do your specific job, safely, rapidly, economically. Safety is the *first* in-built quality of any machine that bears the name **WRIGHT**. They are designed for speed and efficiency; built for rugged durability.

See your **WRIGHT** distributor. You'll find him listed in your metropolitan classified telephone book. If your problem is special, ask your distributor to call a **WRIGHT** engineer, who has had years of experience in solving material-handling problems.

ACCO

TRADE MARK

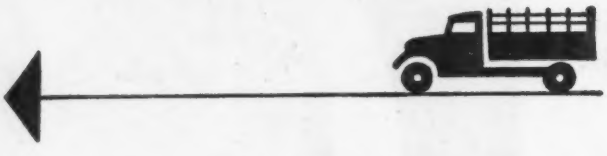
York, Pa., Chicago, Denver, Los Angeles, San Francisco, Portland, New York, Bridgeport, Conn.

WRIGHT MANUFACTURING DIVISION
AMERICAN CHAIN & CABLE

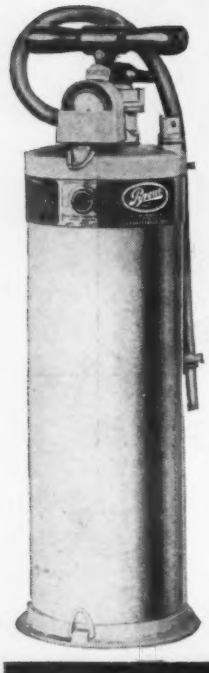
In Business for Your Safety

A Most Important Fire Protection Question . . . Is the capacity of your extinguishers large enough to do the job?

For This Light Truck a Quart Size Pyrene is Ample Protection.



But For This Heavy Trailer At Least a Gallon Pyrene Pressure type Extinguisher Should be Ready to Use.



Yesterday, the fire equipment in your plant may have been ample. But today increased areas, added hazards and the rush of production might cause a small fire to leap to disastrous proportions. Isn't it reasonable to suggest re-checking your fire equipment. Perhaps you should have more one quart Pyrene Vaporizing Liquid Extinguishers strategically placed, or if you now use oil, gasoline, highly volatile chemicals, dip tanks or spray booth, a heavy duty 2 quart or one gallon Pyrene Pressure type vaporizing extinguisher may be indicated. Don't take a chance with insufficient fire equipment now or ever. Call in the nearest Pyrene Jobber to help you with your fire hazard problem. Or write Pyrene for name of jobbers. No obligation, of course.

Standardize on Reliable Equipment by Pyrene.

By the way: When did you last test the fire extinguishers in your home?

Pyrene Manufacturing Company
NEWARK 8, NEW JERSEY
AFFILIATED WITH THE C-O-TWO FIRE EQUIPMENT CO.

qualities for the black market. Large sums are being paid to farmers "under the counter" for contracts made out at the official prices. French spinners, although keener to buy flax than Belgian spinners, are held back to some extent through the control of deliveries at their mills. I think prices that will be paid by both in the near future, when the law of supply and demand will be functioning to force the black market to accept lower prices than those fixed by the Control, will be the same as the official prices. *R-174, Leitch, Limited.*

Asbestos Man Wants Discussion of Problems

I read with some interest your item *R-141* ("Mill Man Asks for Written Agreements," May, 1945). Since our firm is an asbestos firm, you can see that most of the items carried lately are of little interest to us. However, an article such as the one mentioned above is applicable to all mills—woolen, cotton, knitting, etc. *R-159*

Mill Bulletin Boards Should Be "News" Boards

A small bulletin board in each department of the mill can do a lot toward maintaining worker morale. Mill or department events appealing to the workers can be presented more quickly and easily than in any other way. If the supervisor wants to post a few interesting facts about production in the department, the bulletin board will gain attention for what he has to say. If someone clips a few jokes and tacks them up, he should not be reprimanded, for a laugh helps at times.

The whole point is this: bulletin boards may be instructive, but if a mill wants employees to refer to them often, they should not be used exclusively for instruction. Many workers who might not come forward with an item for the bulletin board may contribute some good ideas if he is approached by the supervisor and asked for a news note, joke, safety hint, etc. *R-170*

Enthusiastic Worker Can Be Made An Asset

The mill is no place for the "practical joker." He should be disciplined to the point of discharge if he cannot control his playful attitude toward his work.

Completely different, however, is

PAGE *Welding* ELECTRODES

for your information

SEND FOR THIS NEW BOOKLET

● A few months ago, **PAGE** announced the new **PAGE Hi-Tensile AF Electrode** for all types of AC and DC welding of mild steel. Today **PAGE** offers an illustrated booklet of detailed information and instruction on how to use these electrodes for best possible results.

If you have not used **PAGE AF Electrodes,** this booklet will tell you the purposes for which they are best suited. If you are using them, here is instruction on how to use them to the best advantage.

Your **PAGE** distributor can provide you with a copy of this book. Or, if you prefer, write direct to the factory at Monessen, Pa. *Get in touch with Page*

ACCO

Monessen, Pa., Atlanta, Chicago, Denver, Los Angeles, New York, Pittsburgh, Portland, San Francisco, Bridgeport, Conn.

ACCO TRADE MARK

PAGE STEEL AND WIRE DIVISION
AMERICAN CHAIN & CABLE

SULPHO HAND CLEANER

WILL NOT DEFAT THE SKIN

For those who have naturally dry skin and for those who must in the course of their work dip their hands in solvents, degreasing compounds and similar materials, West offers this new special type of hand cleaner. Due to the nature of the product, it has an almost neutral pH. Sulpho Hand Cleaner is manufactured from the highest quality sulfonated castor and vegetable oils but its cost compares favorably with other products of lesser efficiency.

Especially recommended for women workers. • Send for FREE booklet

WEST DISINFECTING Company

42-16 WEST ST. • LONG ISLAND CITY 1 • N. Y. • DEPT. TW

the man who seeks attention by telling occasional jokes, teasing those around him, or engaging in conversation during his hours of employment. He must be watched so that he does not waste too much time, but his pleasant and cheerful viewpoint helps build morale in the department and reduces the tension of the more monotonous tasks.

The foreman's problem is to keep this worker's humor and talk within reasonable bounds. If possible, select for him a position where he must pay careful attention to his duties at short, frequent intervals. Never allow him long periods during which he can disrupt schedules by lengthy conversations. With this automatic control over his activities, there will be no need to curb his natural enthusiasm —which then will become an asset in maintaining a happier frame of mind among workers in the department. *R-169*

Floor Is Not Suitable For Gaging Whiproll

I am not in accord with the Whip Roll Gage which was the May warbond winner shown in the July issue of TEXTILE WORLD [Kinks and Short-Cuts].

I have leveled thousands of looms, and oftentimes I have found it necessary to put pads up to 1 in. in thickness under the feet at one side of the loom to compensate for floor sag.

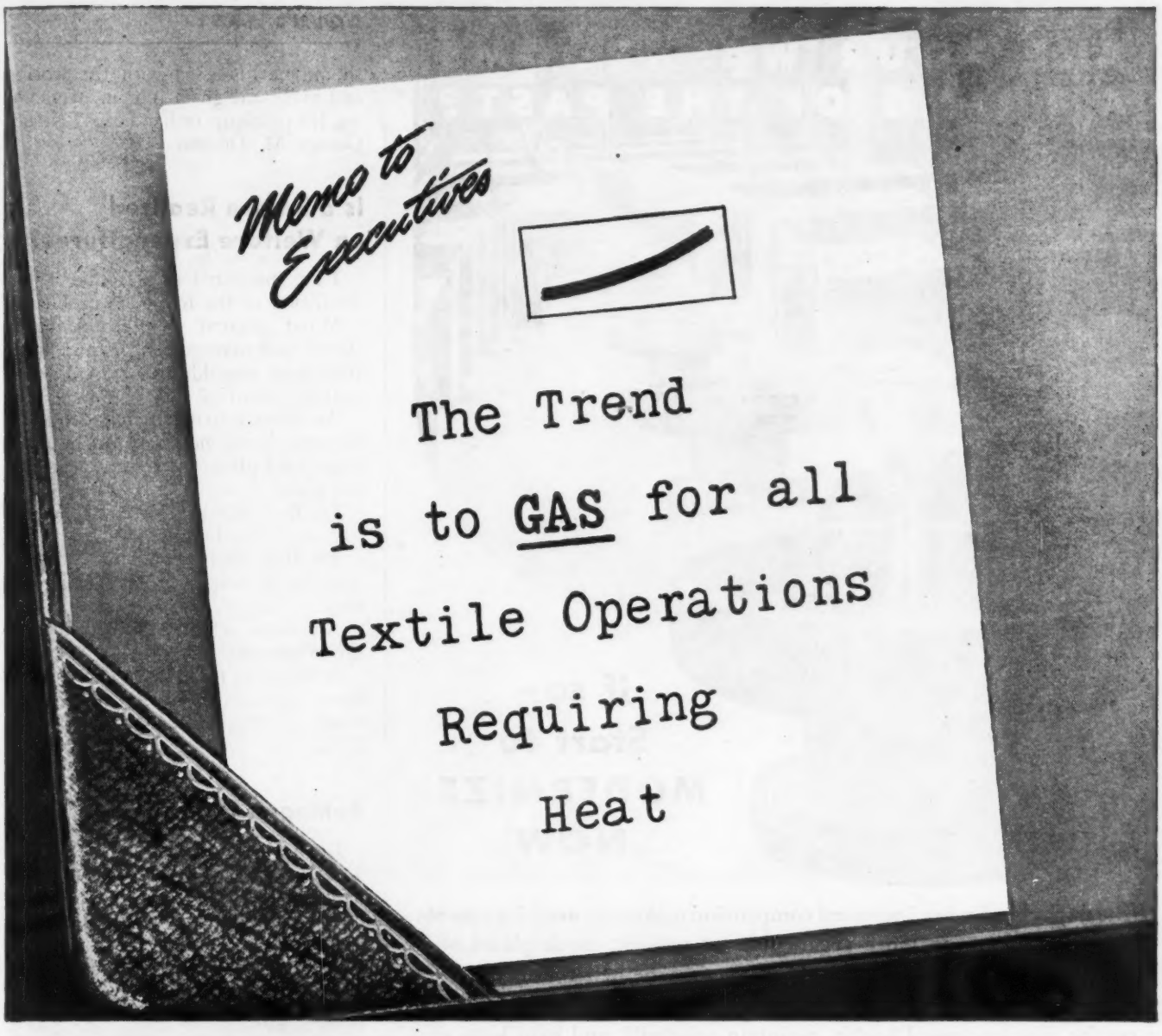
Using the floor for gaging any part of a loom is not good practice, especially when you come to a loom which has been leveled by packing under its feet. *R-171*

Foremen Must Watch Personal Dislikes

Every foreman or supervisor will agree to the theory that his first duty is fairness to the workers. Yet when he starts to put this general idea into practice, his personal dislikes may get in the way of the complete fairness necessary to successful management.

Foremen should try never to dislike any worker as an individual and should try to help him overcome any points that interfere with his efficiency in the mill.

If a foreman should develop a dislike for a worker, he should study himself and the worker to determine if it is a purely personal dislike and if the basis of the dislike reduces the worker's efficiency. Things which fall in the first group should be overlooked, but the points in the second group



Over the past ten years the use of Gas for all industrial operations, and particularly in the textile field, has been most pronounced. So well have the values of this modern fuel been appreciated that the use of Gas by industrial and business establishments has doubled in that time to the amazing figure of over 1,350,000,000,000 cubic feet, used in 1944.

Constantly improved Gas industrial equipment, the result of unremitting research, is an important reason why the trend is to Gas in the textile field. The combination of Gas and modern Gas equipment offers: greater economy, both in overall and unit costs; speed in production because Gas is faster; extremely close automatic control—a characteristic in which Gas is unsurpassed; cleanliness which results in better products and improved working conditions.

These and other values which Gas and today's Gas equipment bring to your textile operations make it imperative that you look into this fuel when planning post-war expansion or remodeling. It is made easier for you by the Industrial Gas Engineer of your local Gas Company, who is available for consultation, without obligation.

AMERICAN GAS ASSOCIATION
INDUSTRIAL AND COMMERCIAL GAS SECTION
420 LEXINGTON AVENUE, NEW YORK 17, N.Y.

THE TREND IS TO GAS
FOR ALL
INDUSTRIAL HEATING

In the days ahead when increased competition makes the need for *capable, efficient* workers even more urgent than at present, those plants with modern conveniences will benefit by attracting the better workers.

Clean, sanitary wash facilities stand high on the list of desirable features for they safeguard health, maintain goodwill, and help keep employees cooperative and satisfied with work conditions.

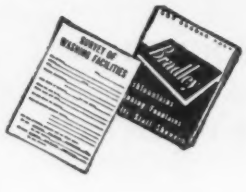
A Few Recent Bradley Washfountain Installations Include: 25 more for Brown & Sharpe, 6 more plus 3 Bradley Multi-Stall Showers for Youngstown Sheet and Tube, 21 to Milton Bradley Co., 11 to Singer Mfg. Co., 11 more to Remington Arms, 18 more to Chrysler (Calif. plant), 13 to Pennsylvania R. R., 8 to Shefford Hosiery Mills.

Bradley Washfountains provide the ideal, modern, sanitary facilities—serving up to 10 persons simultaneously with clean *running* water from a central sprayhead. One Washfountain takes the place of 8 to 10 separate "single-person" wash basins, each eliminating from 16 to 20 faucets. This alone, with the 80% reduction in number of piping connections, means a drastic cut in maintenance work.

Water is drained off as used—no dirty bowls to clean out—no delays—no contamination. Water consumption is much less with Bradleys, space is saved—cleanliness and health promoted. . . . . BRADLEY WASHFOUNTAIN CO., 2325 W. Michigan St., Milwaukee 1, Wis.

BRADLEY *washfountains*

Write today for Catalog 4308 and Washroom Survey Sheet.



should be discussed with the worker and every aid given him in overcoming his problems or handicaps. *R-168, George M. Dodson*

Is a Return Realized on Welfare Expenditures?

I am interested in a Round Table discussion of the following problems:

What present or future return should mill managements expect from their large expenditures for employee welfare activities?

Are these activities purely defensive measures made necessary because the other local plants in an area have similar plans?

Do they increase employee health, welfare, or contentment?

Do they decrease absenteeism, retain present employees, or attract new ones?

Are these activities appreciated by the employees?

It seems to me that the answers to these questions are of vital importance to the future in the textile industry. *R-157*

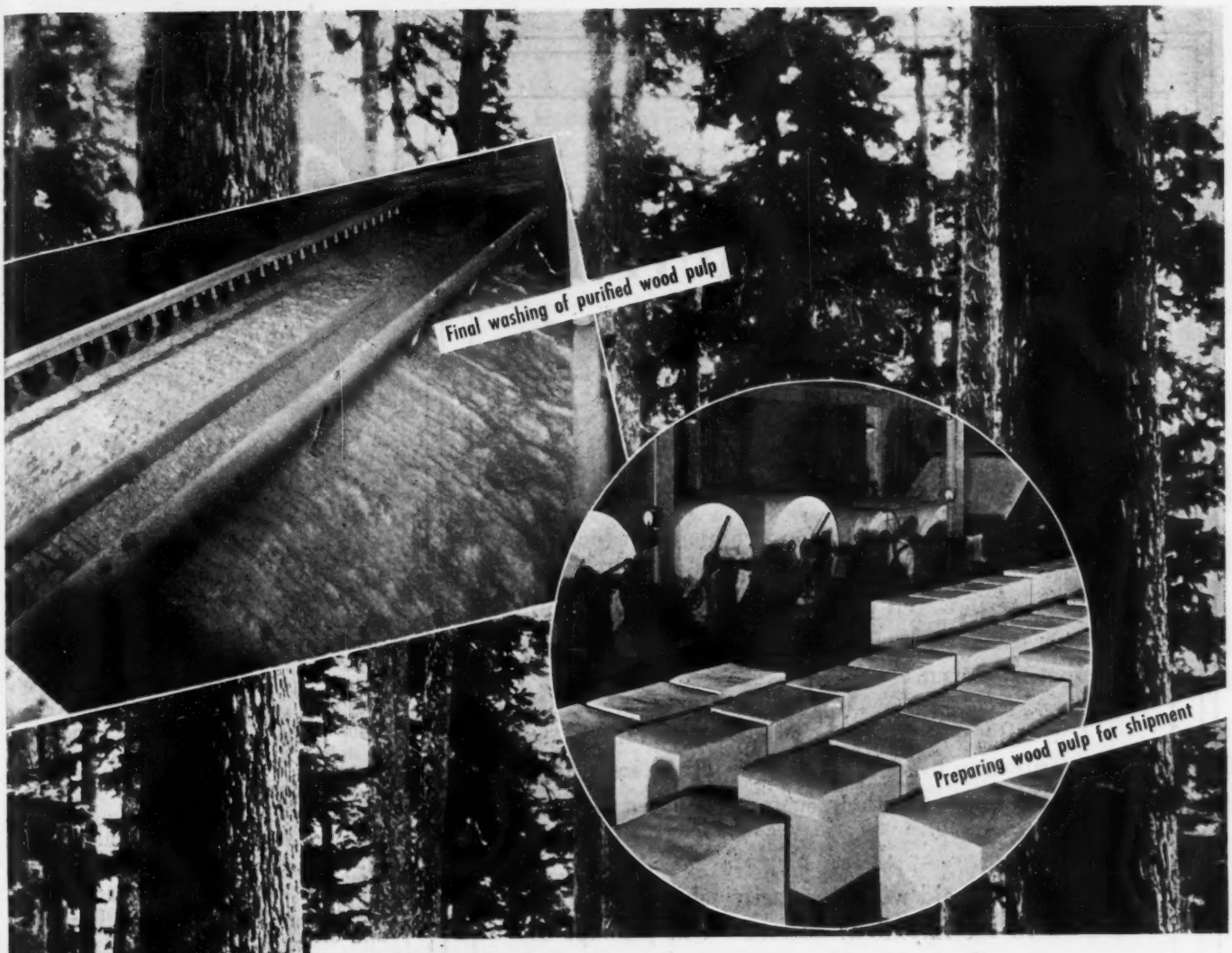
Bemberg Trade Name

Bemberg as used on p. 99 of July TEXTILE WORLD is the trademarked name of the American Bemberg Corp. for cuprammonium rayon it produces.

50 Pounds of Nylon

Photo Courtesy U. S. Rubber Co.

This model is pointing to the equivalent of 750 pairs of nylon hose in a B-29 bomber tire that is being tested. Now that nylon is released for hosiery, some of the 10,000,000 lb. a year formerly allocated for tires will go to knitters.



WOODPULP–THE PRIMARY SOURCE OF RAYON

More than three-fourths of all cellulose consumed by the rayon industry consists of highly refined wood pulp. As the leading producer of this highly specialized raw material, Rayonier devotes its technical efforts, in war and in peace, to the development of new forms of cellulose to benefit mankind.

This program includes the maintenance of the highest standards of present-day wood pulp qualities, the development of pulps for new uses, and the improvement of present pulps.

The company's research laboratory is staffed by men of broad experience and outlook who are capable of providing the highest quality products and service. Close collaboration with customers on their individual problems is the guiding influence in all of our activities.

Uniform quality, a feature of Rayonier pulps, has been obtained by special processes and equipment, knowledge of the required properties and careful control of operations. That is why Rayonier pulps are the best today — why they will be even better tomorrow.

RAYONIER
INCORPORATED

Sales and Executive Offices: 122 East 42nd Street, New York 17, N.Y.
Mills: Hoquiam, Port Angeles and Shelton, Wash., and Fernandina, Fla.

TIME TO PRACTICE WHAT WE PREACHED

THE GREAT DAY has come and gone. Peace is here, with rewards but also responsibilities.

Now the plans for civilian production which we cherished through the days when military demands almost overpowered us have their chance to be put in operation. Now we can begin the return to the competitive arena.

The mills which we represent have gladly done their full duty to our government, at the same time doing their best for their customers under the conditions.

To fill the void will necessarily take time—more time than the impatient customer will perhaps always be willing to give.

No doubt that time could be reduced, if the mills which we represent were willing to temporize with quality or we were willing to forego the service which we as selling agents should render.

Our service is comprehensive — including research and information on raw materials, mill operations, financing, accounting, advertising and promotion as well as sales.

These complete facilities may be of interest to you in formulating your peacetime plans.

MINOT HOOPER & COMPANY

Selling Agents, 40 Worth Street, New York City

(established 1841)

BOSTON • CHICAGO • SAN FRANCISCO • ATLANTA

Three Processes Given For Finishing Gray Goods

Technical Editor:

We would appreciate having information on the best and most modern (automatic if possible) process to handle shrinking and bleaching of 2½ million yards or more of cotton gray goods per year. The weight of the goods varies from 1.90 to 3.25 yd. per lb. We want an average shrinkage of 5%, with residual shrinkage of not more than 1½ to 2%. (9062)

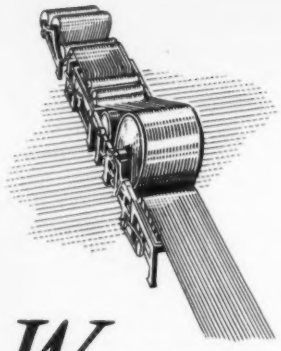
There are three processes now available for the continuous preparation and bleaching of cotton fabrics. E. I. du Pont de Nemours & Co. and Buffalo Electro-Chemical Co. (Becco System) have installations for scouring and bleaching cloth in either the rope or open-width form. Mathieson Alkali Works also has developed a method by which open-width preparation of cloth may be carried on continuously.

These processes consist, essentially, of applying caustic soda to the gray goods in a saturator, then passing the goods into an enclosure where they are heated with steam to temperatures around 180° to 212° F. They are maintained at this temperature for 30 minutes to an hour. After this stage, they are washed and entered into another saturator in which bleaching chemicals are applied. The goods are passed from there into another steam chamber where they are again heated and allowed to remain until the bleaching action takes place. Upon removal, they are thoroughly washed and the preparation cycle is completed. Total time for the job may vary from one to two hours.

In the case of the DuPont and the Becco systems, the cloth is usually preheated and entered into an enclosed J-box, where the temperature is maintained for the scouring or bleaching period.

With the Mathieson unit, the cloth is dropped on a conveyor in open width in an enclosed chamber filled with steam in order to maintain the

(*Continued on page* 211)



● While today's starches are vastly improved—their basic purpose is still to give finish, strength and weight to fabrics from the modern loom—even as the Flemish weavers of the Fourteenth Century used starch to improve their fine fabrics.

Today—*Staley Starches* are under strictest laboratory control to meet all requirements of weavability and weight. Highly adaptable to formulas where special warp sizing problems exist, *Staley's Textile Starches* have been developed by skilled chemists and are under the most exacting chemical control throughout the entire processing. As a result . . . *Staley Starches* have proved highly applicable to every sizing formula . . . you can rely on their uniform quality and dependable performance from car after car. Tell us your requirements and we can recommend the exact *Staley Starch* for your every formula need.

Weavers of France

Number Five in a series published as a Tribute to the Development of Weaving through the centuries

Flemish weavers in the 14th Century—the artists of all time in the textile industry —used a starch sizing to give lustre and freshness to the lovely cloth they wove

Staley's CORN AND SOY BEAN PRODUCTS

STALEY STARCHES

A. E. STALEY MANUFACTURING COMPANY

DECATUR, ILLINOIS

ATLANTA · SPARTANBURG · PHILADELPHIA · SAN FRANCISCO · DALLAS · CHICAGO · NEW YORK · BOSTON

Copyright 1945, A. E. Staley Mfg. Co., Decatur, Ill.

TEXTILE BANKING COMPANY

Factoring Service

Puts your sales on a cash basis
Strengthens your cash position
Relieves you of credit losses

55 MADISON AVENUE • NEW YORK

(Continued from page 208)

required high temperature. Cloth can be passed through these units at speeds ranging from 50 to several hundred yards a minute, depending upon the weight of the goods, construction of the machine, and numerous other factors. Controls for speed, chemical concentration, temperatures, etc., add much to the efficiency of operation.

Since the continuous process consists of two stages, the scouring and the bleaching, it requires usually a duplication of units, both of which are much the same. In your case, with the small yardage you are thinking of running per year, it would be possible to install one saturator, one steaming unit, and washing equipment. The goods could then be run through this unit once for scouring and then returned through the same unit for bleaching, with the proper chemicals in the saturator.

You do not state in your inquiry whether or not these goods are to be dyed. If they are to be finished as whites, the rope-form unit would probably be satisfactory; but if they are to be dyed, it would be well to consider the open-width type. This is particularly true when you get down to the heavier goods, such as the 1.90 weight. A lot also depends upon the fabric itself, as to whether or not it is a plain weave of open construction, or a closed weave such as a twill or gabardine.

Each of the companies mentioned will be glad to go thoroughly into this whole matter with you; and since units have been in operation for some time, the companies are now able to recommend the best equipment for your particular needs and to give you figures on operating costs.

You also mention handling shrinkage. The only method of shrinkage control that we know of at present which will give you reliable results on various weights and construction of goods is the Sanforizing process. There are various chemical treatments in the synthetic resins field which work satisfactorily on spun rayons and other manufactured fibers; but so far, we do not know of any development of this sort which will give you positive and accurate control on all-cotton fabrics.

Formula Is Given For Knitting Production

Technical Editor:

Can you give us a formula for calculating the gray knitted weight per yard and the production in pounds of plain knitted fabrics?

The following are the known factors:

OUT OUR WAY

ALL I CAN READ HERE IS IODOFORM-- IT DON'T SAY IF IT'S GOOD INTERNALLY!
OH, HERE'S DEL NOW! HE AIN'T CUT UP BAD, BUT HE'S SICK TO HIS STUMMICK! SLIPPED IN SOME GREASE AND TOOK A HARD FALL -- NOW ABOUT THIS IODOFORM...
NO-NO-NO! THAT'S FER EVERYTHING ELSE! THE OTHER BOTTLE THAT SEZ JAMAICA GINGER IS FER INTERNAL! DANG IT! WHY DIDN'T JOE PUT SPEEDI-DRI ON THAT OILY FLOOR?
AN OUNCE OF PREVENTIVE
J.R.WILLIAMS
T. M. REG. U. S. PAT. OFF.
COPR. 1945 BY NEA SERVICE, INC.

PREVENTION is always the *best* medicine for any ailment . . . and for slick, sick floors and surfaces the best precaution is SPEEDI-DRI! SPEEDI-DRI, the oil-thirsty, granular absorbent, lays a carpet of safety under foot, while soaking up oil and grease. It does *its* work . . . while *you* work in safety!

SPEEDI-DRI saves valuable man-hours in floor-maintenance. No expensive machines required . . . no trained personnel. Anyone can use SPEEDI-DRI, quickly and easily. Just spread it around . . . and improve your *standing*.

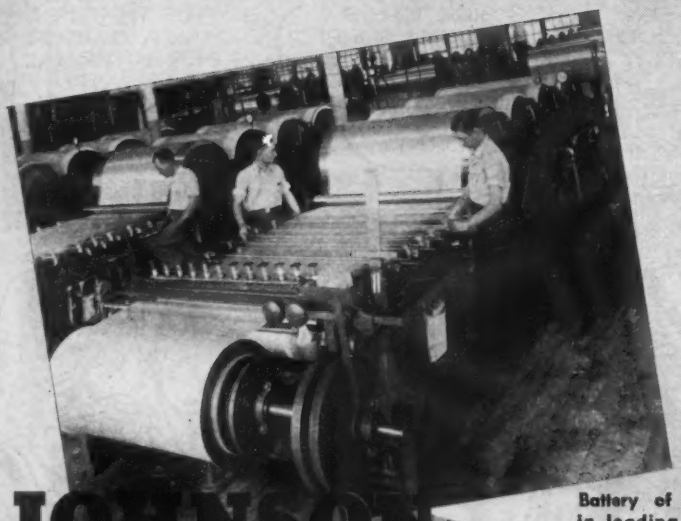
Sweep it up with an ordinary, stiff broom . . . and you've got safe, clean floors. It's that simple. In addition, SPEEDI-DRI eliminates the danger of "flash-fires" on greasy, oil surfaces . . . for SPEEDI-DRI will not readily burn, even when oil-soaked!

Pin your card to this advertisement and mail today for full details and a generous sample of SPEEDI-DRI.

SUPPLIERS: East—Safety & Maintenance Co., Inc., New York 1, N. Y.
South, Midwest & West Coast—Waverly Petroleum Products Co., Philadelphia 6, Pa.

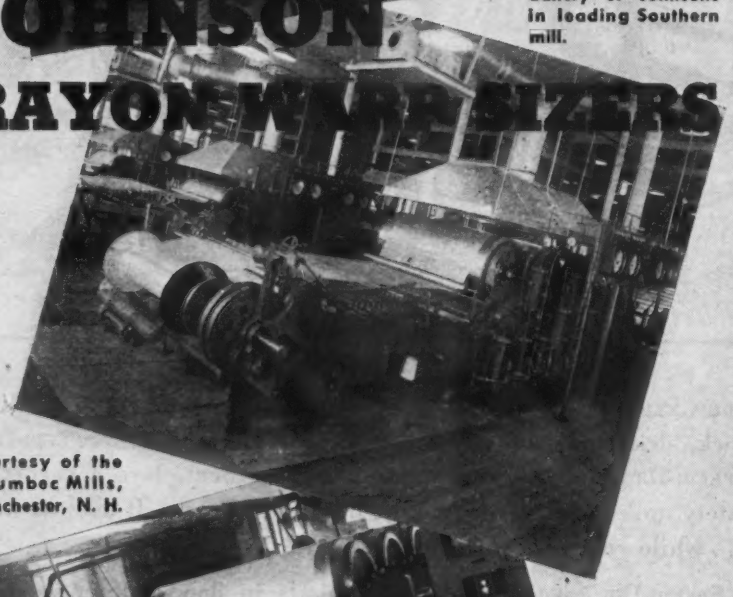
SPEEDI-DRI
OIL AND GREASE ABSORBENT

They HAD to be GOOD

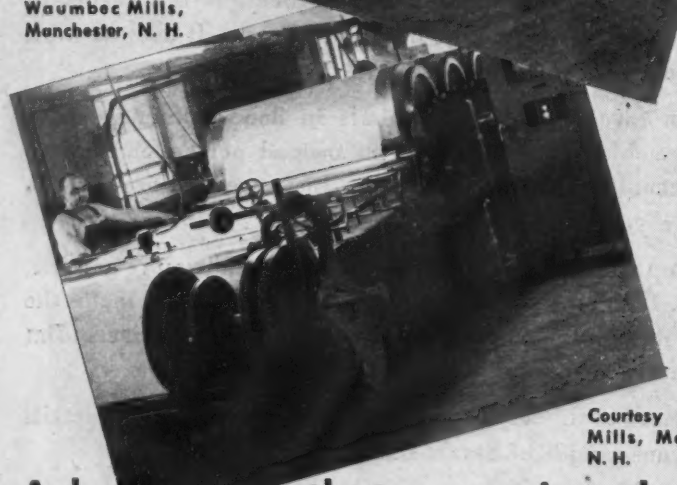


Battery of Johnsons in leading Southern mill.

JOHNSON RAYON WARP SIZERS



Courtesy of the Waumbec Mills, Manchester, N. H.



Courtesy of Verney Mills, Manchester, N. H.

Ask the mills that are using them— here and in many foreign countries.

Charles B. Johnson MACHINE WORKS

PATERSON NEW JERSEY

QUESTIONS AND ANSWERS

Make of machine, number of feeds, r.p.m., diameter of cylinder, number of needles per inch in cylinder, number of stitches per inch, and counts of yarn. (9063)

The following formula will work satisfactorily: Actual pounds production =

$$\frac{\text{Dia. X feeds X r.p.m. X cut X min.}}{\text{800 X yarn X stitches}}$$

In using the formula, the diameter in inches should be measured on the needle line. The cut is the needles per inch, and the stitches are cylinder stitches per foot of yarn. The constant 800 has been developed over a period of time and is used when it is necessary to adjust the relationship of the units used. If, for example, the time unit is hours, the constant must be divided by 60, making it 13.3; and if the time unit is ten-hour days, the constant must be divided by 600, making it 1.33. Anyone may derive a special formula from this general formula to suit his particular conditions.

Retarded Spindle Used to Unwind Yarns

Technical Editor:

I am mailing you a sample of glazed cotton yarn, one tube of which is wound with two ends up and the other with three ends up. We received the yarn about one-half pound to a tube, and since then we have reeled it and sent it to our dyer. We now have some of the yarn in skeins and some on spools. We want to get the ends separated, so that we can use the yarns singly. (9064)

Any competent throwster will be able to separate these threads and supply them singly on spools, if not coned or tubed. The ends can be separated by mounting the tube or skein on a spindle which is retarded by means of a weighted band. The individual ends can then be taken to the bobbins of any winding or redraw machine and separated. If you can use the yarn from bobbins, the cost should not be very great.

Permanent Finishes for Rayon

Technical Editor:

I understand that in recent years considerable progress has been made in the application of various permanent finishes to rayon. Of particular interest to me at the present time are the finishes designed to give rayon fabrics permanent stiffness, such as Ceglin.

Would you be able to give me a bibliography covering this subject?

In this connection I have never seen a reference to the application of the Heber-

ANDREW K. HENRY

★

RAYON TOPMAKER
VISCOSE
ACETATE
RAYON NOILS

★

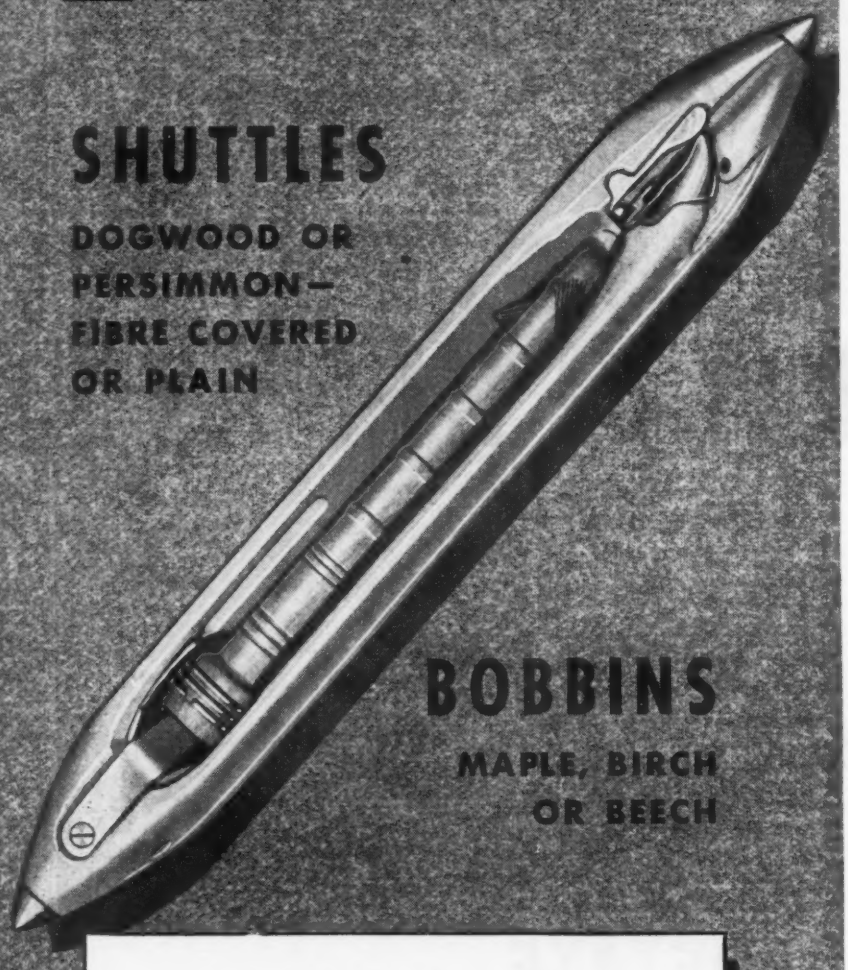
158 SUMMER STREET

BOSTON 10, MASS.

LOWELL

SHUTTLES

DOGWOOD OR PERSIMMON—FIBRE COVERED OR PLAIN



BOBBINS

MAPLE, BIRCH OR BEECH

A HALF CENTURY OF EXPERIENCE

Experience is the best teacher and this company has had half a century of it in manufacturing shuttles and bobbins for all fibres.

All wood for Lowell Products is well seasoned and kiln dried. Every operation is performed in our own shop to control quality and speed up deliveries. Any desired finish can be furnished.

May we hear from you?

LOWELL SHUTTLE COMPANY

Established in 1896

15 TANNER STREET • LOWELL, MASS., U. S. A.

lein process to rayon fabrics, producing fabrics resembling cotton organdies. I should appreciate it if you could tell me what has been done in that direction. (9044)

Permanent finishes on rayon cover a great deal of territory. It would take in cationic softeners, color-fixing chemicals, urea and melamine resins, alkali-soluble celluloses and cellulose ethers, new silica resins, and many others.

The majority of information covering these finishes is found mostly in manufacturer's literature, and in what has been published in either TEXTILE WORLD or the *American Dyestuff Reporter*. Apparently, the inquirer is particularly interested in the cellulose ethers, on which he can get a goodly amount of information by contacting manufacturers.

We have never seen in literature a reference to the Heberlein process to rayon fabrics for producing organdy finishes and are not sure that fabrics made of rayon would respond to the caustic and acid treatment of this process.

Two Methods May Be Used For Finishing Sportswear

Technical Editor:

Can you inform us about the machinery and the order of operations recommended for finishing and dyeing the sportswear fabric mentioned on page 118 of Hoye's book, "Staple Cotton Fabrics," and described as a "fabric made with 2-ply yarn in both warp and filling with one end of spun rayon and the other of combed cotton—piece dyed—38" width." (9060)

It is our understanding that fabrics of this type could be processed either on equipment such as is used for finishing all-spun goods or on cotton equipment, due to the presence of the combed cotton yarns greatly adding to the strength and stretch resistance.

If handled as an all-spun construction, it would probably be scoured out in a kettle or beck and dyed in the same type of equipment. Colors used could be directs, the vat leuco esters, or vat dyes. The cloth would be squeezed or extracted, opened, and dried either on a loop drier or a tenter frame. It would then probably be given a resin treatment for hand and crush resistance. The resin would be applied on a pad and the cloth dried and cured on a loop or air-lay drier, and again soaped in rope form on a kettle. Here, softening or finishing agents could be applied; or the goods could be squeezed again and dried, and softening agents or other finishing materials applied on a mangle or quetch. The mangle could be set up

For Five Generations a Part of the American Scene

as the

Postwar Period

becomes a

Reality...

As WE CLOSE in on Japan and the first faint fissure of Peace appears in the **world** war clouds enveloping us . . . we behold the birth of the postwar period there has been so much talk about.

This period has been heralded as a remarkable new era when peacetime adaptations of war born products will practically revolutionize the art of living.

If what has been done at the Cheney Mills with fabrics and yarns is any indication of what is to come from other industries, then we are truly on the threshhold of a wondrous age. Scientific research in the Cheney Laboratories for military production has been responsible for extraordinary results both in the realm of natural and synthetic textiles.

These highly specialized Cheney products will be made available to the textile industry as soon as conditions permit. But in the meantime, and as the postwar period approaches reality, now is the time to investigate these developments in order to be ready for peacetime production.

Cheney Brothers invite your inquiries.

Remember to buy those War Bonds you've been meaning to buy but haven't gotten around to buying yet!

CHENEY FABRICS

CHENEY BROTHERS

Quality manufacturers since 1838

350 FIFTH AVENUE, NEW YORK 1, N. Y.

Velvets—Pile Fabrics—Cravats—Upholstery and Decorative Fabrics
Yarns for Industry—Men's Wear Fabrics—Machine Thread—Industrial Fabrics

Sales Offices

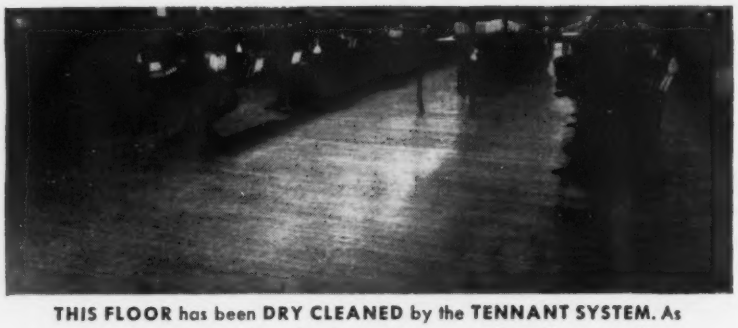
BOSTON • PHILADELPHIA • CHICAGO • LOS ANGELES

MILLS AT MANCHESTER, CONN.

ALSO AT MANCHESTER, CONNECTICUT, A SUBSIDIARY...PIONEER PARACHUTE COMPANY

HOW MUCH MONEY HAS YOUR MILL FLOOR SOAKED UP?..

BY OLD FASHIONED SCRUBBING *AND* WET MOPPING?



THIS FLOOR has been **DRY CLEANED** by the **TENNANT SYSTEM.** As a result the surface is clean, hard, non-slippery and looks like a new floor.

FLOORS SHOULD BE "DRY CLEANED" *NOT* SCRUBBED

The Tennant System provides for the "dry cleaning" of floors by the burnishing action of steel wool which smoothly removes dirt and grime from floor surfaces. Soilage from the floor is picked up in the *same operation.*

REDUCES FLOOR CLEANING COSTS

The Tennant System *can reduce floor cleaning costs as much as 50%.* It eliminates scrubbing and wet mopping and *saves* floors from the deterioration often caused by water soaking into floor structure. The Tennant System reduces floor patching and repairing to a minimum through its "dry cleaning" application. It makes floor structure sound, firm, and leaves floors clean, smooth and wear-resistant to make trucking easy and walking safe.

Let the Tennant System transform your floors into clean, bright, light-reflecting surfaces that improve working conditions in your mill.

WRITE TODAY for Tennant's new book—"Your Floors Are Important To Your Mill's Production"

G. H. TENNANT COMPANY
2586 North 2nd Street
MINNEAPOLIS 11, MINNESOTA

in conjunction with a heated tenter frame, so that the goods could be finished without wrinkles and the width set.

If cotton equipment is used, the goods could be scoured open-width on a jig, and dyed on the same equipment in direct or developed colors.

If vat colors were to be applied, the goods would likely be dried on a set of cans and then dyed, either by the continuous method for light shades or by pad-jig for the heavier shades. It would be best to dry, after dyeing, on a loop or air-lay drier in order to relax the cloth and reduce the tension built up in the scouring and dyeing operations. Drying on a tenter frame provided with an over-feed to avoid tension is also satisfactory.

The resin application would be much the same as previously mentioned, though the fabric might be soaped on the jig or a continuous open-width soaper rather than on a kettle or beck.

Regardless of the method used for applying the resin, calendering or finishing off a Palmer might follow the last drying operation.

We understand that this cloth is made in more than one count and weight. If that is correct, the construction must be taken into consideration when selecting the method of preparation. The lighter-weight and lower-count fabrics are naturally less resistant to distortion and stretching. Regardless of construction, it is desirable to avoid stretching the fabric any more than is necessary, even though the cotton yarns give it considerable stability.

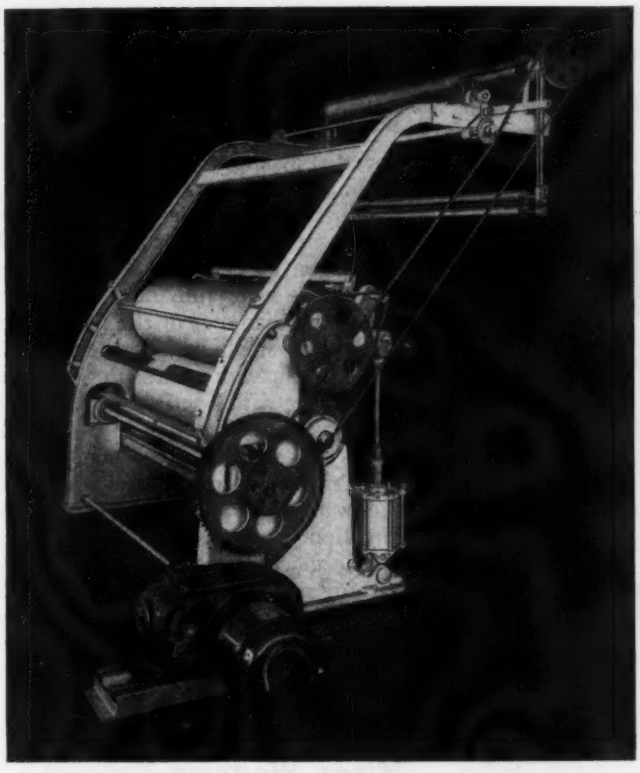
Marratti Machine No Longer Available

Technical Editor:

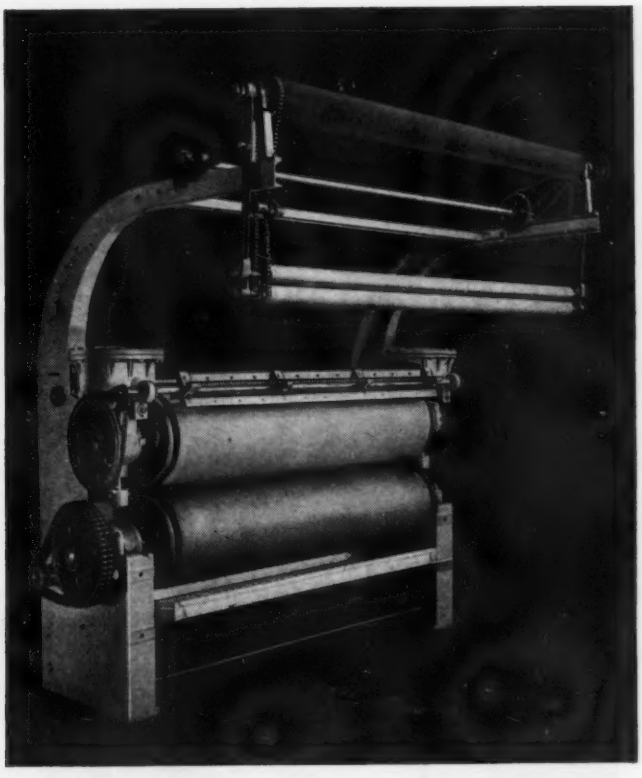
Will you be kind enough to let us know the name of the agent or manufacturer of the Marratti Knitting machine?

This make of machine is a circular warp knitting machine. (9054)

We regret that the name of the agent or manufacturer of the Marratti Knitting Machine is not available, since, according to the best information we can obtain, this machine is no longer manufactured. It was produced in Europe only, and just a limited number reached this country. We believe that Kayser, and possibly Van Raalte, purchased some of the machines but we understand they were run only a very little, if at all. The machines which they have, or had, are 18 gage, although in 1937 a 28-gage



Pneumatic Cloth Squeeze Rolls with variable motor drive and built-in driven folder.



Hunter Pneumatic Squeeze Rolls. Pressure applied to top roll thru air cylinder mounted at top of unit.

FOR BETTER AND MORE UNIFORM EXTRACTION OF MOISTURE

Specify

HUNTER PNEUMATICALLY CONTROLLED PRESSURE EXTRACTORS

When a plant seeks more uniform extraction with a higher percentage of moisture removed from all woven fabrics, without sacrificing continuous or straight line production, the economical solution will be found in the new Hunter Pneumatically Controlled Squeeze Rolls.

This new model may be used as a separate unit, in combination with a Scutcher, in continuous cloth carbonizing or washer lines, or on tracks in wet finishing rooms. It is particularly adaptable for use directly in front of cloth tentering lines.

It is adaptable to any woven fabric, either flat or pile type, on cottons, rayons, woolens, worsteds and blended or manipulated fabrics. It requires less horsepower to operate than any other extraction equipment. For example, 5 H.P. against 20 H.P. for the average vacuum extractor. In keeping with modern machine design, it is streamlined, with an eye to appearance as well as utility. On comparative test with other methods of extraction, that is, vacuum extractors or centrifugals, it has shown notable advantages. For example:

On cotton plushes at relatively high speed of cloth travel, it has shown extractions of 48 to 52 per cent, figured on the bone-dry basis. These figures are 30 per cent better extraction than shown by a vacuum extractor running at the same speeds. Furthermore, it has shown no more "pile flattening" on plushes than the vacuum extractor or the centrifugal type.

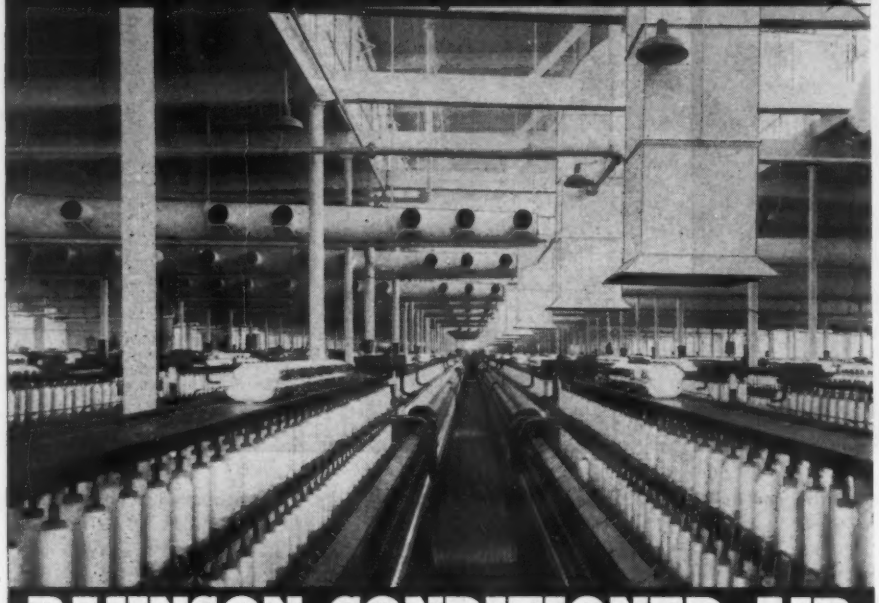
In cloth carbonizing lines, where uniform as well as a high percentage of acid extraction is imperative, this unit has shown marked improvement. This improvement in extraction holds true for fabrics ranging from 7 ounces to 40 ounces per lineal yard.

For full details, write for bulletin and other illustrative data.

JAMES HUNTER MACHINE CO.
NORTH ADAMS, MASSACHUSETTS, U.S.A.
FOUNDED 1847

Relieve
Hot Weather Fatigue

TEXTILE
POSTWAR SPECIFICATION No. 1



BAHNSON CONDITIONED AIR

Production goes up and fatigue losses go down, along with seconds, breakage, and all the minor overhead increases and labor problems that come at the end of a shift working under the handicap of imperfect atmosphere conditions.

Bahnson Engineers know textile air conditioning through experience—its needs, its problems, and its solutions. To this they have added their own years of research and laboratory testing of equipment. When you specify Bahnson Conditioned Air you get engineering "know-how" plus the finest equipment.

Bahnson System
POSITIVE CIRCULATION
LOWER OPERATING COST
AIR CONDITIONING ENGINEERS
THE BAHNSON CO. WINSTON-SALEM, N. C.

886 Drewry St. Atlanta, Ga. | 93 Worth St. New York City | 703 Embree Crescent Westfield, N. J. | 976 W. 6th St. Los Angeles, Cal. | W. J. Westaway Co., Ltd. Hamilton, Ontario

machine was shown in Germany.

In case you are interested, this was a circular warp knitting machine which operated at approximately 300 courses a minute. It used latch needles and employed either one or two warps broken up into six or eight sections in a hexagon or octagon shape. When two warps were run, one was placed inside the diameter of the other. Naturally, very small-diameter beams were used. As a yarn guide, the machine used a ring with a series of holes. This ring was knitted closely to the needle hooks and permitted the manufacture of a "single bar milanese" fabric, since the warps rotated constantly in one direction.

The machine was formerly used for bathing suits and dress material, although we understand that the German who was most interested in the Marratti Machine changed over to tricot.

Minor Weaving Defects Look Like Neps on Cloth

Technical Editor:

Will you please tell me how the nep-like particles got on the enclosed swatch of cloth, the name for them, and how they may be avoided. (9059)

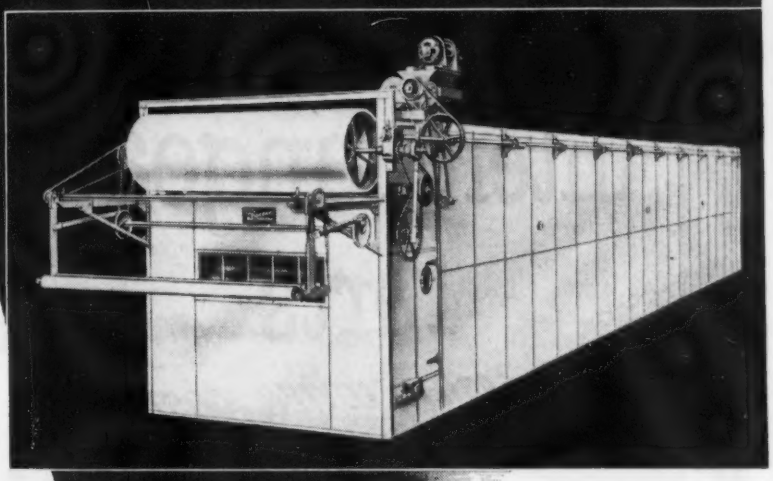
The foreign particles on the sample of cloth fall under three classifications: (1) looped filling, (2) wild fibers, and (3) oily filling. Strictly speaking, none of these defects are on the cloth, but are in it. The finishing processes through which the fabric was run caused the loose filling and fibers to adhere so closely to the cloth that they only seem to be on it.

You might want to look up photographs and definitions of "Defects in Woven Fabrics" which have appeared in various past issues of TEXTILE WORLD. You will find the defects in question illustrated and defined.

An analysis of the faults appearing in the sample you enclosed indicates that the conditions which caused them are much less in degree than the conditions which caused the faults discussed in the articles. The looped filling probably resulted from a slight variation of tension in the shuttle or a slight bouncing of the shuttle. The wild fibers and oily filling probably were caused by cleaning in the weave room.

As you gather from the above comments, there are several other causes for each of the three defects. Preventing the particular defects which are giving you trouble will become a matter of experimentation until the proper remedy is found.

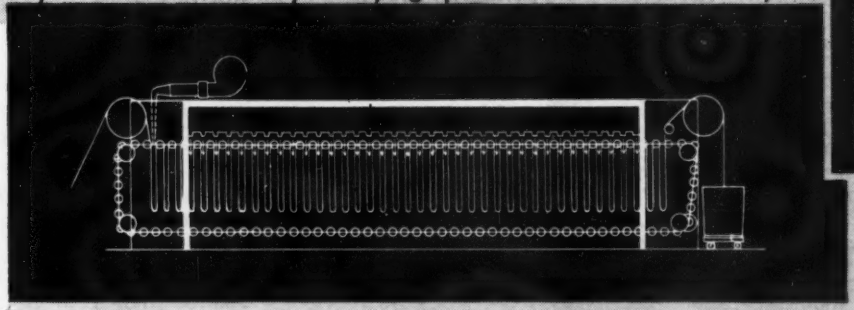
Check these advantages of the PROCTOR LOOP DRYER



- Suitable for wide variety of piece goods.
- Meets demands for drying finest quality fabrics.
- Assures maximum production per square foot of floor space.
- Adaptable for curing resin treated materials.

If you are engaged in the production of either *washed dye-house goods* or *finished piece goods*, you should become acquainted with the Proctor Loop Dryer. This machine is particularly adaptable to the drying of spun rayons, rayon and silk fabrics and other goods where final appearance and quality must be kept to a high standard. However, the dryer is equally well suited to the efficient handling of toweling and other coarser materials. In the drying of both general classes of goods it is possible to obtain large scale production. The machine can also be equipped for high temperatures necessary for curing resin treated fabrics. However, when the machine is designed for curing—it should not be used for drying goods after resin treating . . . but solely for curing. Accurate control and refinements in design, such as sliding baffles, which regulate the amount of air directed into the loops of material as it is carried through the dryer, assure perfectly smooth loops and prevent swirling and creasing occurring, which may cause marks in the finished goods. Covered, revolving girts prevent the finished goods from being marred by stick marks, because no part of the material is in contact with any part of the girt for any appreciable time. The operating advantages of this machine are so many—and may be varied to such an extent depending upon individual mill requirements—that the only way you can get a true picture of just how this dryer may be employed in your mill is to discuss your drying operation with us. Write today!

In order to achieve high capacities in minimum floor space, this machine is often designed with special tilting girts. The operation of these tilting girts, illustrated below, permits reducing centers between girts and makes possible increased loading of the machine. The girts are tripped to an open position at time of looping, thereby permitting free loading.



Cross section of the Proctor Loop Dryer illustrates location of nozzles, air-circulation, travel of goods through machine and illustrates positive action of air looping device.

PROCTOR & SCHWARTZ • INC • PHILADELPHIA 20 • PA.

Interchangeable Parts

MEAN EASIER, LOWER COST VALVE MAINTENANCE

HERE'S HOW IT WORKS!

All parts of the valves shown here (except bodies and bonnet rings) fit each other perfectly. If, for example, you need a stem, disc, or seat ring for the "Renewo", you can use the corresponding part of the "Ferrenewo"—*it is exactly the same.* This means fewer parts to be carried, speedier repairs, and greater ease in making them.

Fig. 1021 150 lb. S. P. Iron Body "FERRENEWO" Regular Type

Fig. 73-P 200 lb. S. P. Bronze "RENEWO" Plug Type

● Maintenance men can give you a flock of reasons why they prefer LUNKENHEIMER quality-built Valves. Prominent among those reasons is the *wide* interchangeability of parts made possible by Lunkenheimer's highly developed simplicity of design and precision workmanship.

In the "Renewo" and "Ferrenewo" Valves, this interchangeability has long been of highest practical value to industry, in making valve maintenance easier, speeding production, lowering costs. And—vitally important today—*saving fuel* that comes from tight valves.

Lunkenheimer Distributors are located in the principal industrial centers. There is one near you. Call on him—you'll find him equipped with a COMPLETE STOCK of parts that will make Lunkenheimer "interchangeability" a time-saving, labor-saving, money-saving FACT in your plant!

Fig. 73 200 lb. S. P. Bronze "RENEWO" Regular Type

The Lunkenheimer Co., Cincinnati 14, Ohio, U. S. A. Branch Offices: New York 13, Chicago 6, Boston 10, Philadelphia 7. Export Department: 318-322 Hudson St., New York 13, N. Y.

LUNKENHEIMER VALVES

BRONZE, IRON, STEEL AND CORROSION RESISTANT ALLOY VALVES, 125 TO 2500 LB. S. P.; BOILER MOUNTINGS, LUBRICATING DEVICES, AIRCRAFT FITTINGS

Spun Rayon Industry

(*Continued from page 141*)

grees to alter the character of the cloth, and far greater progress has been made than in Britain in the art of combining twist with yarn content to affect cloth character.

BETTER USE OF LABOR. The better utilization of labor, another factor responsible for lower production costs in the United States, results from the different attitude of the operatives toward the matter of work loads. Trade unions in Britain have traditionally displayed hostility toward the machine because it has a tendency to displace labor. Hence, the introduction of new machinery is there hedged about with restrictive conditions which take away a large part of the contribution to efficient production that improved machinery could make. British trade unions do not permit continuous working, so that machinery in Britain is operated for an average of only 48 hours a week against a not unusual 144 here.

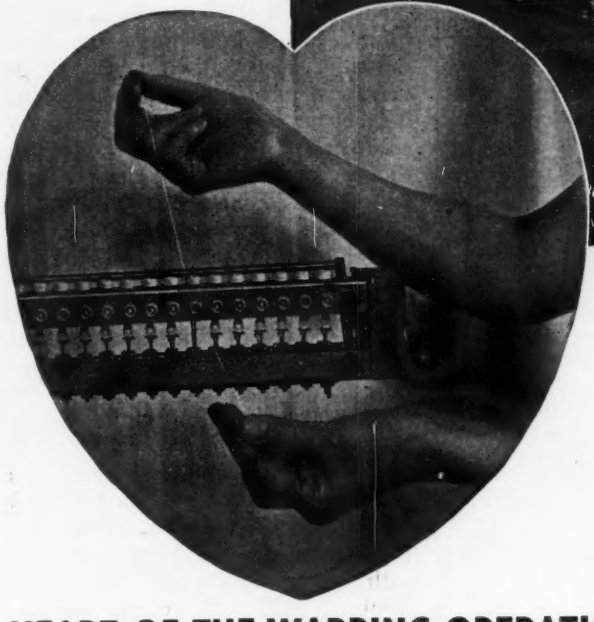
In the matter of work-loads, while here they are based on scientific operating surveys and time studies, in Britain they are based on traditional agreements made in the dead past before modern machinery made mechanical power a more important factor in increased output than the skill of the human operative. The willingness of the American operative to have his work-load scientifically assessed is, according to the report, responsible not only for lowered production costs, but also for the payment of higher wages.

VERTICAL INTEGRATION. Another factor making for lower American production costs is the difference in the structure of the industry in both countries. Mills in the United States are generally vertical units. "Therefore," the report points out, "the executives and technicians in an American mill can follow the yarn they produce through to the woven fabric and can judge to a nicety the tolerance of quality and regularity of yarn required for any given fabric." By contrast, the British industry is organized on a horizontal basis. The British spinner, therefore, is quite frequently in the predicament of having to produce, at unwarranted costs, yarn of higher quality than is necessary for certain types of fabrics in order to secure an order from a manufacturer in competition with some other spinner.

This advantage in the matter of costs enjoyed by the U. S. rayon industry impelled the delegation to a recommendation what would once

The Super-Efficient REINER WARPER AND CREEL—

Now Available!



HEART OF THE WARPING OPERATION

This Mercury Thread Stop Motion is not subject to corrosion or affected by lint—important for safe high speed warping. In a class by itself as a stop motion—dependable, efficient and more effective.

This motion can be applied to any standard creel.

BEAMER FEATURES

(1) Constant thread speed.
(2) Easy Doffing.
(3) Direct Beam Drive, instead of friction drive.
(4) Slow Starting Speed, independent of warping speed.
(5) Controlled hardness or softness of the warp beam.

CREEL FEATURES

(1) Overhead Magazine Delivery.
(2) All Steel Construction.
(3) Suitable for Rayon or Cotton Cones.
(4) Movable Tension Gate for Balloon Control, for different size packages.

OTHER REINER MACHINES INCLUDE

FOR WARP KNITTING

High Speed Tricot Knitting Machines
High Speed Kay Looms — High Speed Raschel Machines

FOR HOSIERY KNITTING

Automatic Heelers for Hosiery Machines
Gauge conversion and reconditioning of full fashioned hosiery machines

FOR WARPING

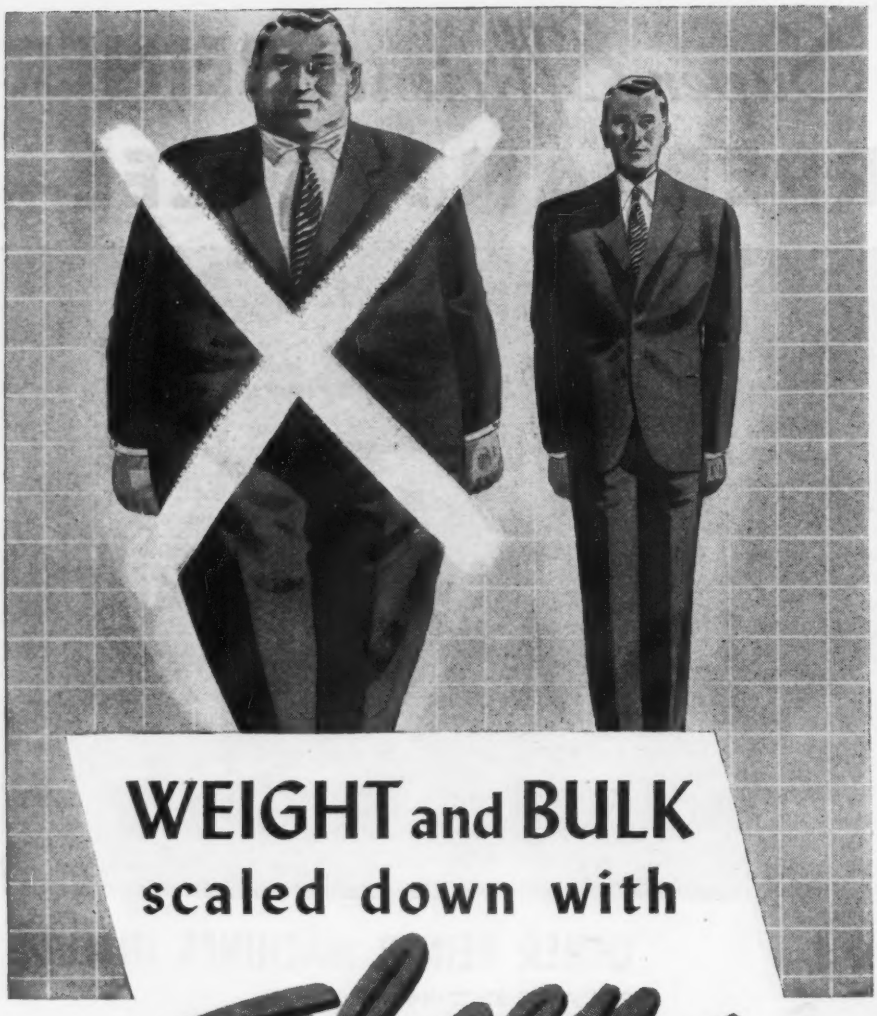
High Speed Warpers (full width and sectional)
Magazine Creels — Jack Creels
Thread Tensions (counterbalanced and disc)
Thread Stop Motions

FOR EMBROIDERING

Automatic Embroidery Machines (10 and 15 yard lengths)
Automatic Bobbin Winding Machines (for Embroidery and Quilting Machines)
Pattern Card Punching Machines — Repeating Machines

ROBERT
REINER
INCORPORATED
WEEHAWKEN, NEW JERSEY

Ten minutes from Times Square, New York via Lincoln Tunnel. Take bus No. 61, 67 or 167 at Public Service Terminal at 41st St. near 8th Ave. Get off at Pleasant Ave., Weehawken, N. J. Tel. UNion 7-0502, 7-0503, 7-0504, 7-0505.



WEIGHT and BULK
scaled down with
Fibreen

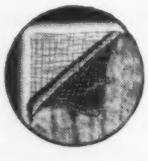
Not "human weight and bulk"—but, the kind of weight and bulk that manufacturers are up against when it comes to taking full advantage of a minimum freight car.

For example, a certain company was only getting about two-thirds of the box car load they were buying because of the way their product was wrapped and packaged.

Fibreen licked that one. With it, so compact a package was provided that where only *40* units were loaded into a car before, *60* were moved in . . . and still it went forward as a minimum car. Figure the saving, yourself.

In addition, considerable labor was saved and added protection to the contents was realized.

Maybe your wrapping and packaging problem lends itself to Fibreen. Get the facts on what this tough, dirt and waterproof paper has done for others and perhaps might do for you. Why not write for samples and complete information?



Sisal fibre reenforcement for strength—special asphalt for water-proofness—kraft paper for clean, easy handling—sealed by heat and pressure to produce Fibreen.

THE SISALKRAFT CO.
205 W. WACKER DRIVE · CHICAGO 6, ILL.
NEW YORK · SAN FRANCISCO · LONDON · SYDNEY

Manufacturers of SISALKRAFT, FIBREEN, SISAL-X, SISALTAPE AND COPPER-ARMORED SISALKRAFT

sound strange, coming from Lancashire, where quality was once regarded as a sacrosanct factor in a product. But, says the report: "Whilst we should never agree to a senseless debasement of yarn quality standard, we are compelled by what we saw (in the United States) to question if the competitive nature of the United Kingdom rayon-staple industry does not foster a fetish for quality to the exclusion of cost consideration and fitness for purpose." Such a veiled invitation to produce shoddy cloth must make the Lancashire merchants of the 19th century, who preached to the ends of the world the excellence of quality in British goods, turn in their graves!

VARIETY OF PRODUCTION. One illusion, generally prevalent in Britain, that was dispelled by the delegation's visit was the assumption that mass production in U. S. rayon is the key to lower American production costs. Actually, it was discovered that the variety of yarns in production, including cotton and spun-rayon yarns, exceeded, with one or two exceptions, the yarn-production variety of the Lancashire spun-rayon spinning mills. One mill in New England was actually spinning and processing yarn for weaving 45 varieties of cloth.

The general working conditions of the operatives in British rayon plants are nearer the high standard of American plants than is the case in the average British cotton mill. Greater progress has been made in this country with the installation of fluorescent lighting; but, even so, some mills in this country would not stand comparison in their lighting conditions with some Lancashire rayon-staple spinning mills. As regards air conditioning, the delegation noted that this was universal in mills in this country. The degree of humidity used in carding and spinning rooms is much higher than is normal in Lancashire.

As far as decoration and cleanliness of the mills are concerned, there is not much to choose between the two countries. Only in one respect does Britain suffer by comparison. The flooring is much better in the United States because, according to the delegation, hardwoods, a home product, are plentiful and cheap.

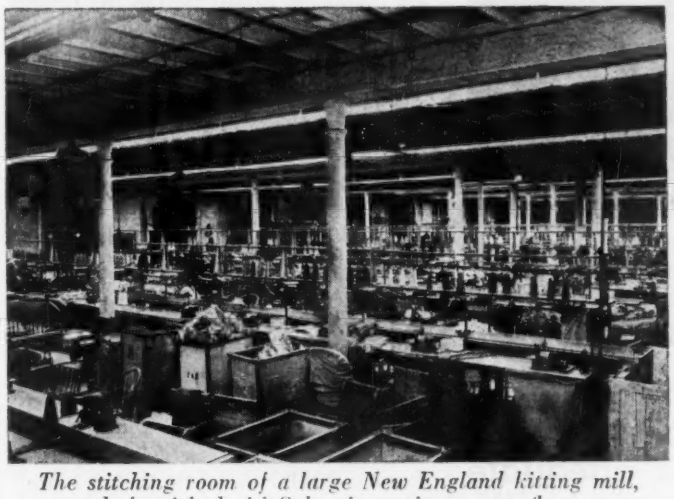
NOT FAR BEHIND. All in all, while admitting leadership to the U. S. industry, the British rayon delegation did not consider the British industry as far behind in progress as the cotton mission did in the case of the British cotton-textile industry. The high British costs of production were, how-

SYLVANIA NEWS

TEXTILE EDITION

SEPT. *Published by* SYLVANIA ELECTRIC PRODUCTS INC., Salem, Mass. 1945

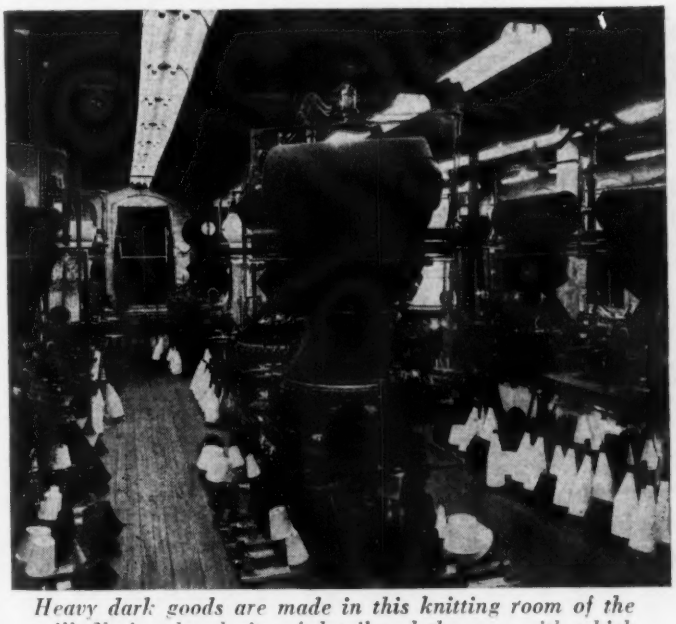
TRICKY PROBLEM OF LIGHTING KNITTING MILL SOLVED WITH SYLVANIA FLUORESCENT LAMPS



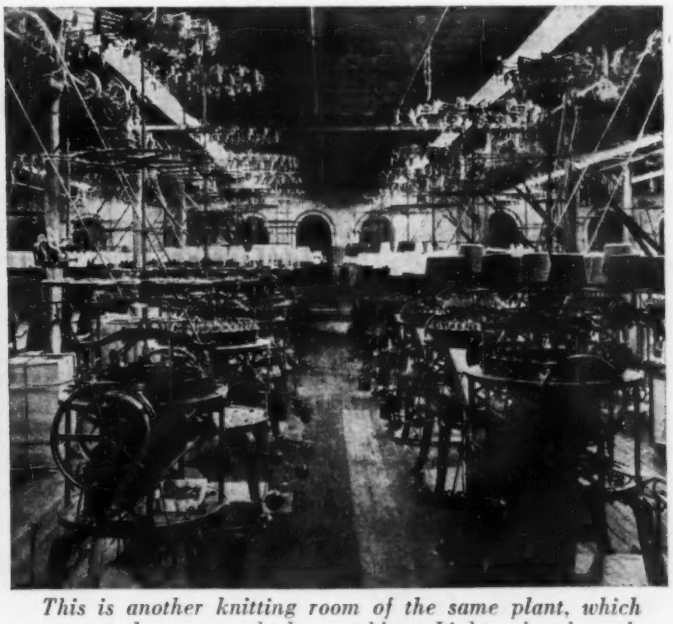
The stitching room of a large New England kitting mill, recently furnished with Sylvania continuous row fluorescent lighting. There is no glare, louvers lower brightness and there is an even 40 f.c. of light on the stitching tables.

Great importance in the lighting of textile mills is usually placed on the quality and spread of light — as well as on the amount of foot-candles of illumination produced at working levels. This enables workers' eyes to focus easily on the fine weave of fabrics.

This problem in industrial lighting has recently been solved in one of New England's large knitting mills by the installation of a Sylvania fluorescent lighting system. Lighting engineers with a full understanding of light behavior in textile plants have designed a system for this mill which provides a high level of glare-free and well-diffused light. Both continuous rows and individual units of fluorescent fixtures have been used to bring the proper illumination to every corner of the plant. Objectionable shadows have also been eliminated. As a result of this new lighting system, the comfort and ability of employees to work at top efficiency has been greatly increased.



Heavy dark goods are made in this knitting room of the mill. Notice the clarity of detail and the ease with which the yarn can be distinguished with a properly distributed 35 to 40 f.c. fluorescent illumination.



This is another knitting room of the same plant, which presented a severe shadow problem. Light colored goods manufactured here have simplified the "seeing" problem, and approximately 25 f.c. are provided.

SYLVANIA ELECTRIC

MAKERS OF FLUORESCENT LAMPS, FIXTURES, WIRING DEVICES; ELECTRIC LIGHT BULBS; RADIO TUBES; CATHODE RAY TUBES; ELECTRONIC DEVICES

Today a must

The Use of Synthetic Fibres Makes the Question of Proper

HUMIDIFICATION

of Paramount Importance!

Walton

Humidifiers easily and quickly installed

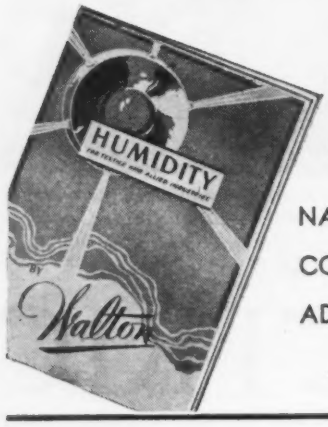
Rapid increase in the production of synthetic fibres emphasizes the need NOW for uniform, adequate and accurately controlled HUMIDIFICATION.

One-way, two-way, or multiple directional domes are provided, as required. Furnished complete, ready for immediate installation.

Get all the facts about WALTON Equipment. Send for your copy of "HUMIDITY". Coupon is provided for your convenience.

WALTON LABORATORIES, INC.

Irvington, N. J.



WALTON LABORATORIES, Inc., Irvington, N. J.
Please mail me copy of "HUMIDITY"

NAME .....

COMPANY .....

ADDRESS .....

.....

T.W.

ever, a source of great anxiety to the rayon delegation. The conclusion was forced upon the members that the British industry must somehow adapt its horizontal structure to achieve the benefits that vertical structure gives to the U. S. rayon industry.

Some form of cooperation and collaboration across the existing various independent sections of the trade must be devised if the industry as a whole is to emulate the American industry and gain the advantage of modern materials, machinery, and methods. What it thought about the truculence of British trade unions and the chance of getting them to desist from restrictive practices, which are seemingly as responsible as the horizontal structure for inefficient production in the British rayon industry, the delegation did not divulge in its report.

Spinning Problems

(*Continued from page* 169)

the wicks. Mill No. 1 uses saddles with and without wicks.

Question No. 18 asked whether there is any advantage in the use of a full-doff stop motion on warp or filling frames. Mills No. 14 and 16 favor the use of a stop motion on warp frames: while Mills No. 2 and 4 find some advantage in using it on filling frames. Mill No. 1 felt that if a mill has a limited number of yarn counts, ring diameters, and traverse lengths, it will find the stop motion an advantage.

Three mills thought the stop motion objectionable for warp frames. Mill No. 3 stated that after the knock-off stops the frame on a full package, the doffer must restart it in order to run the rail down for doffing; and this causes an excessive number of ends down. Mill No. 10 found a doffing schedule more suitable.

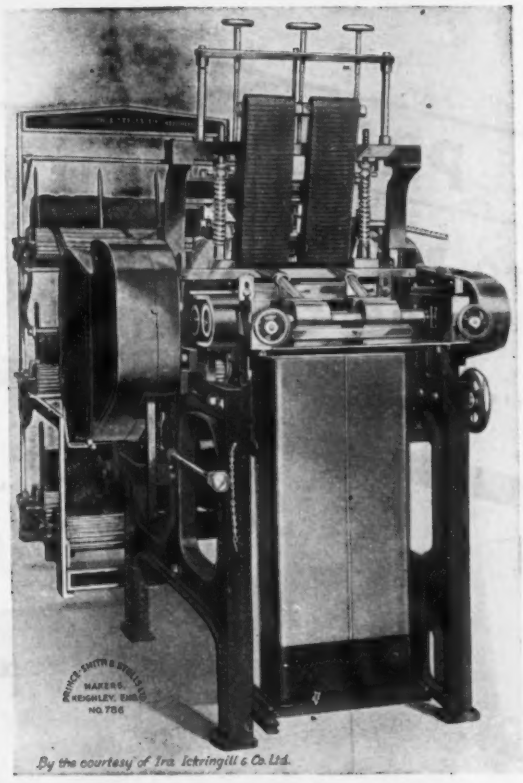
Twenty-four mills answered Question No. 19 regarding the best method for starting up new spinning rings. The different methods and the number of mills using these are as follows:

1. Lighter travelers are used by 12 mills.
2. Frames are run at a reduced speed by three mills.
3. Lighter travelers and reduced speeds are used by five mills.
4. Standard speeds and standard travelers are used by two mills.

In addition to using a lighter traveler and running the frame at a reduced speed, Mill No. 23 also changes the frame to a medium-coarse or a coarse yarn.

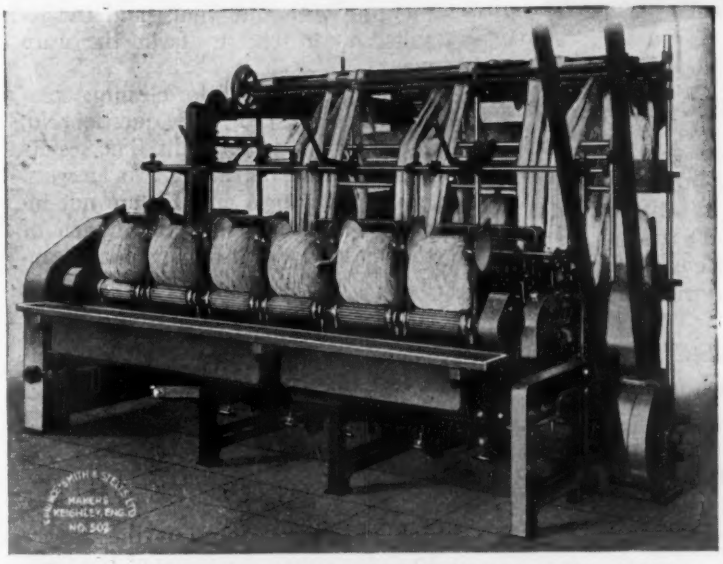
Question No. 20 asked whether the tensile strength of yarn processed on long-draft equipment can be increased

WE ARE MAKERS OF
THE CONTINENTAL
AND ENGLISH—
SYSTEMS OF COMBING,
DRAWING, SPINNING
AND TWISTING.



DOUBLE HEAD CAN INTERSECTING GILL BOX

WORSTED



CONTINENTAL TYPE INTERSECTING GILL BOX

THIS UNIQUE POSITION
MEANS WE CAN OFFER
YOU OUR SERVICES
NO MATTER WHICH
SYSTEM YOU ARE
INTERESTED IN.

PRINCE-SMITH & STELLS LTD.

WORSTED MACHINERY MANUFACTURERS

KEIGHLEY (Yorkshire) **ENGLAND**

Sole Agents U. S. A. & Canada: Atkinson, Haserick & Co., 211 Congress Street, Boston 6, Mass.

PROBLEM:

TO PREVENT TEXTILES FROM DRYING OUT "WHEN THE HEAT'S ON"

SOLUTION:

ARMSTRONG

Steam Type HUMIDIFIERS

• Humidification of cotton, wool, silk, linen, jute and hemp (and other material which must have relatively high moisture content to be in good condition) during the winter season—"when the heat's on"—is easy and inexpensive with Armstrong Steam-Type Humidifiers. Textile plant installations have proven that:

(1) Operation is automatic and dependable.

(2) Relative humidity is maintained within close limits.

(3) Operating costs are low — less than 1c per 24 hour day for every thousand cubic feet of space humidified.

(4) Installation costs are moderate.

(5) Maintenance costs are very low.

Bulletin 158 gives you complete technical information, including data for selecting Armstrong Humidifiers. Send for your copy today.

ARMSTRONG MACHINE WORKS

872 Maple Street, Three Rivers, Michigan

ARMSTRONG

STEAM TYPE UNIT HUMIDIFIERS

by lowering the draft on the spinning frame and increasing the draft on the roving frame. Four mills, Nos. 3, 4, 20, and 26, thought that a normal draft of about 15 or 16 results in the best breaking strength of yarn. Excessive variation from normal draft, either an increase or decrease has an adverse effect on breaking strength.

Two mills quoted interesting figures in answer to this question. Mill No. 10, spinning 17s filling out of 1.25 hank roving, obtained a yarn breaking strength of 99.40% of Draper standard; and when changing the spinning draft to make 17s filling out of 1.60 hank roving, the yarn breaking strength rose to 116% of Draper standard.

Mill No. 12, spinning 8s yarn out of 1.60 hank roving, obtained a yarn breaking-strength factor of 2018; but when spinnings 8s yarn out of 1.00 hank roving, the breaking-strength factor rose to 2031.

Question No. 21, asking which wind, warp or combination, gives the better results on Barber-Colman spoolers, revealed that most of the mills have arrived at definite although varied conclusions. Eight mills said that they obtain better results when spooling from a warp wind; while five mills prefer the combination wind. Mill No. 1 felt that the wind should depend upon the relation between the ring diameter, the traverse of the frame, and the yarn count. Mill No. 2 is now experimenting with the winds, and the results so far tend to favor the warp wind.

The method used for cleaning spinning frames, asked for by question No. 22, was given by 21 mills. The results are shown in the table. two answers, from mills No. 6 and 17, are not included in the table because each of them uses both air and manual cleaning.

No. 17 uses air cleaning for its coarse yarn counts and manual cleaning for its fine counts.

Worsted Yarn Defects

(*Continued from page* 171)

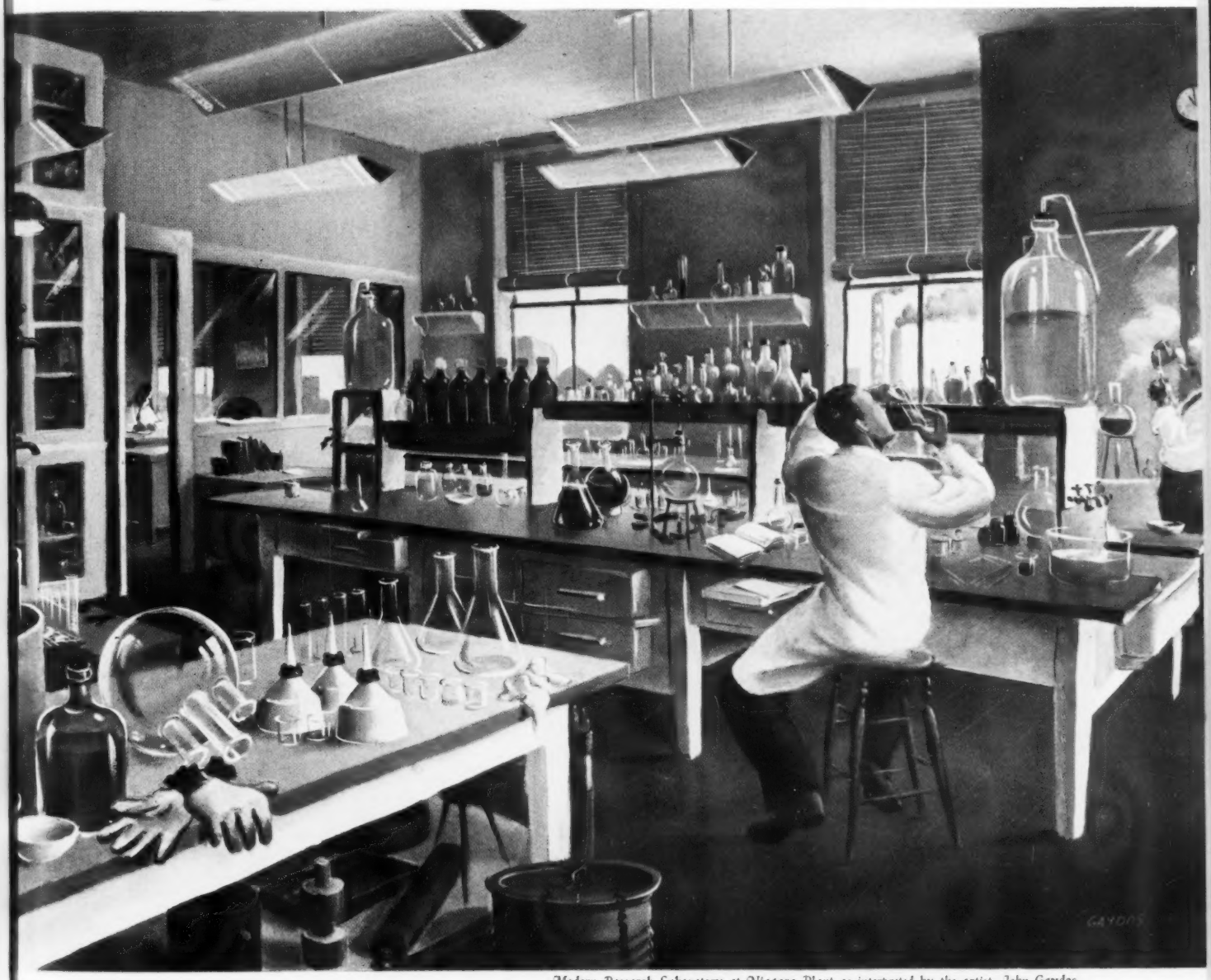
Better fiber control is the answer to slubs caused by lapping of the front carrier roll. This can be achieved mainly in the following ways on an open drawing set.

More Twist. By inserting more twist in the sliver at the machine prior to the operation at which the lapping occurs, the short fibers are less likely to get out of control.

Changing the Ratch. If the ratch, or the distance between rolls, is set too wide the sliver has a chance to open

(*Continued on page* 229)

Source of "Firsts"



Modern Research Laboratory at Niagara Plant as interpreted by the artist, John Gaydos

THE FACT that Niagara was the first to produce several important electro-chemical products in this country is due in great part to the efficiency of its research. Niagara's research activities are under the supervision of men of long and thorough experience in electro-chemical development, manufacture, and usage. This has enabled Niagara to give valuable cooperation to many industries using such products in the processing of war materials. It will prove of equal value in helping these industries convert efficiently to peacetime manufacture. Look to Niagara for experienced chemical service.

Niagara ALKALI COMPANY

60 EAST 42nd STREET, NEW YORK 17, N. Y.

CAUSTIC POTASH • CAUSTIC SODA • PARADICHLOROBENZENE • CARBONATE OF POTASH • LIQUID CHLORINE

(*Continued from page 226*)

up and thereby leave many of the short fibers uncontrolled. A closing up of the ratch may be helpful in overcoming the production of slubs.

Carrier Setting. A change in carrier setting is one of the most common ways of overcoming this defect. By raising the bottom carrier and pushing it as far away as possible from the front roller, the short fibers out of control will be unable to turn around the carrier. In this manner slub trouble is eliminated.

Lubrication. More emulsion, and in some cases more even application, will go a long way toward curing the trouble.

Humidity Control. Whenever possible humidity control should be employed. If the relative humidity is low in the processing rooms of the mill, the fiber will be in a very highly electrified condition because of static charges and to offset this condition more twist will be necessary to control the fibers. The same reaction is obtained when drawing green tops.

SLUBS CAUSED BY OPERATORS. Sometimes an operator will put too many ends through at once and these will lift the back roller. If this occurs, the two or three spindles next to the one that the operator is changing will show slubs.

Also slubs are caused by an operator piecing up an end and forgetting to remove the splice.

FLY. Waste accumulation on the front rolls in drawing is one of the causes of slubs. On the whole, much of this waste can be prevented from going into the yarn by using special cleaning rollers beside the cleaning pads. These are illustrated in Fig. 2.

The thread boards are the chief gatherers of fly and waste on the roving and spinning frames and therefore should be kept perfectly clean. Cleaning with compressed air after each doff will usually eliminate a great portion of this trouble.

NEPS. Neps usually originate in carding and if they appear in the sliver they should be removed in combing. However, all worsted yarns contain a certain amount of neps that slip through the manufacturing processes without causing too much trouble.

Big neps are frequently called slubs and are blamed on the spinner who is helpless to eliminate them.

Any top that contains more than 75 neps per 5 yd. is not up to standard and should be used only for low-count yarns and goods that are to be piece dyed.

DARNELL

Casters Wheels

Darnell Dependability assures savings, service, safety, speed. A caster or wheel for every use.

DARNELL CORP. LTD. LONG BEACH 4, CALIFORNIA

60 WALKER ST. NEW YORK 13 N.Y.

36 N. CLINTON CHICAGO 6 ILL.

RYERSON STEEL IN STOCK

Call Ryerson for any kind, shape or size of steel you need. Steel for manufacturing, maintenance or construction ...all products are available for immediate shipment from any one of the ten convenient Ryerson Steel-Service Plants. Ask for a stock list...your guide to steel.

Principal Products Include:

Bars • Shapes • Structurals
Plates • Sheets • Floor Plates
Alloy Steels • Tool Steels
Stainless Steel • Screw Stock
Wire • Mechanical Tubing
Reinforcing Steels • Shafting
Babbitt • Nuts • Bolts
Rivets • Welding Rod • Etc.

JOSEPH T. RYERSON & SON, INC.

STEEL-SERVICE PLANTS AT: CHICAGO, MILWAUKEE, ST. LOUIS, DETROIT, CLEVELAND, CINCINNATI, BUFFALO, BOSTON, PHILADELPHIA, JERSEY CITY

Why Not? *Have Your* **PERSONAL ACCIDENT** *and* **HEALTH INSURANCE** *with* . . .

EASTERN COMMERCIAL TRAVELERS

Mutual Association • Direct Purchase

No Branch Offices

Massachusetts Company, Incorporated 1894

Insure Your Earnings . . . Protect All

ACCIDENT POLICY PAYS		SICKNESS POLICY PAYS	
$5,000.00-$10,000.00 FOR ACCIDENTAL DEATH	$25.00-$50.00 FOR WEEKLY DISABILITY	$25.00 PER WEEK FOR CONFINING SICKNESS	$10.00 PER WEEK FOR NON-CONFINING SICKNESS
Estimated Annual Cost $15		Estimated Annual Cost $20	

MORE THAN 50 YEARS OF UNFAILING SERVICE

Provides protection 24 hours a day when traveling, while at work, around the home or on vacation

NO POLICY CANCELLED OR RATES INCREASED OR BENEFITS REDUCED ON ACCOUNT OF ADVANCED AGE!

SEND THE COUPON **TODAY**

John S. Whittemore, Sec.-Treas.
Eastern Commercial Travelers
80 Federal St., Boston

Without obligation, please send complete information and application for membership to

Name .....

Address .....

City ..... State.....

T.W. 45 (No Solicitors Will Call)

Wool Scouring

(*Continued from page 157*)

to be no more than a particularly fine water softener.

This technique met with immediate success, producing a wool that was visibly whiter, appeared much cleaner and of a better odor, and was of such superior softness and loft that the difference could be easily detected by inexperienced hands.

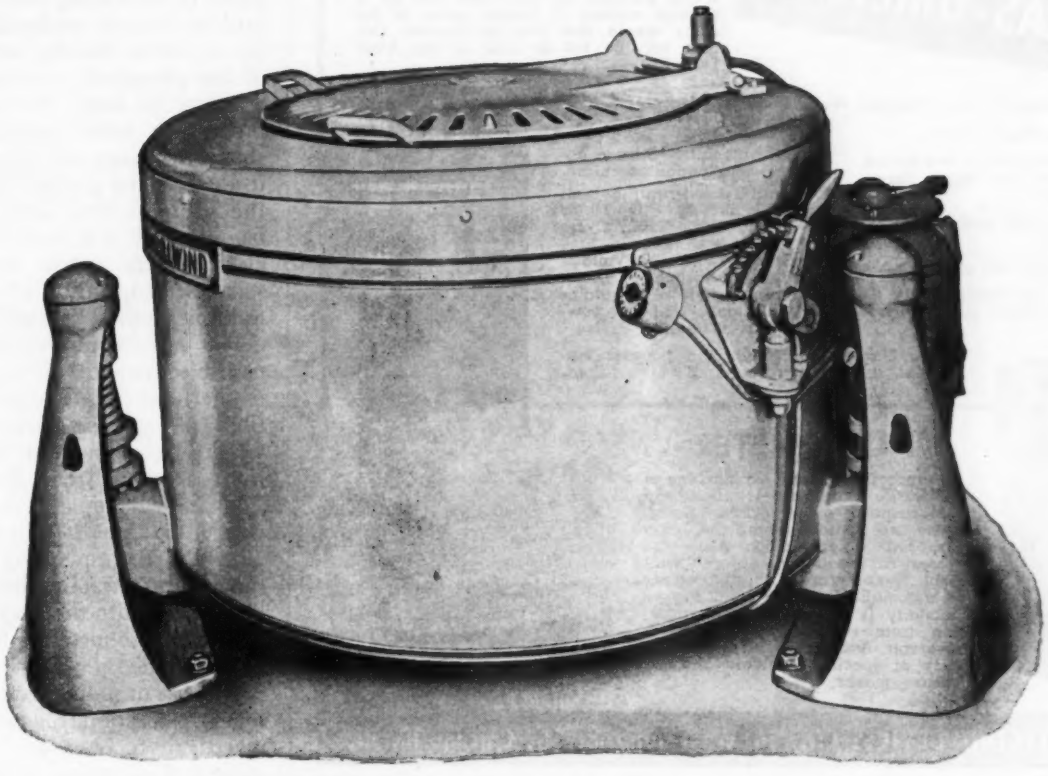
However, the handling of the sodium tetraphosphate solution in addition to the usual soap and alkali solutions added to the labor of the scouring-train tenders who showed a strong tendency to forget to make up the stock solution and frequently omitted the addition of the material at the proper intervals to maintain an effective concentration in the liquor. Results under this operating method were, therefore, somewhat erratic, for which reason the tetraphosphate was next handled dry, introducing the bead form of the material to the ducker pans and permitting it to dissolve gradually as it dipped into the liquor. The size of the phosphate bead was such that it did not fall through the perforations in the duckers, while the rate of solution was sufficient to maintain the proper concentration with only infrequent additions, which were synchronized as nearly as possible with the usual applications of soap and soda. One operator successfully employed this method with a granular tetraphosphate (85% through 20 mesh) because the material was sufficiently cohesive when damp to dissolve rather slowly.

Despite this improvement in procedure, the use of sodium tetraphosphate in the soap stock solution was seen to possess many additional advantages. That is, after the tetraphosphate was added to the soap solution, its further use would be in a sense automatic in that it would be introduced into the bowls with the soap it was intended to protect. Moreover, the ratio of sodium tetraphosphate to soap could be so adjusted as to maintain constantly the optimum balance, thus insuring maximal efficiency and economy in the use of both phosphate and soap. Further additions of soap to maintain the working concentration would contain the proper amount of phosphate to preserve the initial balance. Labor would also be at the minimum, since the tetraphosphate would be handled as such only once, in making up the tank of soap solution.

STOCK SOLUTION. In this method of application, the tetraphosphate could be first dissolved to prepare the standard 20% solution, which could

FLETCHER HIGH-SPEED *WHIRLWIND*

...for more *efficient*, more *economical* extraction



The Fletcher High-Speed "WHIRLWIND" gives you more thorough extraction with fewer extractors, because of its *extra* speed . . . which is the result of these Fletcher features—

(1) Convenient design—shortens loading time.

(2) Acceleration — smooth and extra fast—enables the Fletcher to reach maximum speed in minimum time.

(3) Reduction of actual running time — by 50 percent. The High-Speed "WHIRLWIND" is designed and built to give 1000 RPM with a 48" diameter basket.

(4) Automatic hydraulic brake—finger tip control, brings the Fletcher to a quicker-than usual stop.

(5) Easier—and faster unloading.

More thorough extraction *faster*—fewer extractors needed to get out a given amount of production — spells *economy*. The "WHIRLWIND" is available in regular speed also.

Fletcher products, including Extractors, Narrow Fabric Looms, and Throwing Machinery are sold on a "first come, first served" basis. Priority or WPB approval no longer necessary.

FLETCHER

"WHIRLWIND" . . . THE ALL AROUND EXTRACTOR

FLETCHER WORKS

223 GLENWOOD AVE. PHILADELPHIA ESTABLISHED - 1850

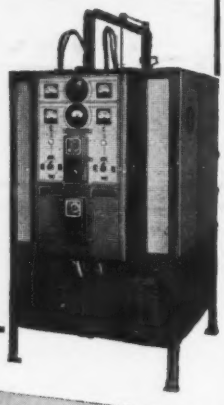
ACCELERATED TESTING
for WEATHERING and FADING with
ATLAS-OMETERS

Twin-Arc
WEATHER - OMETER
Test Results Twice As Fast

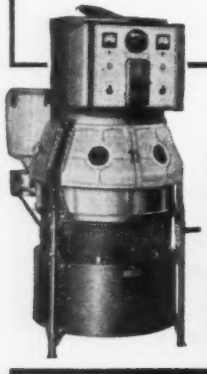
The new Atlas Twin-Arc Weather-Ometer has been developed to save time where speed in testing is essential.
Where Federal Specifications call for a definite number of testing hours in the Atlas single arc Weather-Ometer, this time can be cut in half in the Atlas Twin-Arc.

Exclusive Atlas Twin-Arc Weather-Ometer features:

1. Temperature control.
2. Unlimited range and control of Light and Water Spray Periods.
3. Adjustable and automatic timing.
4. Insulated test chamber.
5. Operates continuously 24 hours without manual attention.
6. Carbon cost 28c per day.
7. Full automatic—Safe to operate unattended overnight.
8. Control panel contains Volt and Ammeters—Time Meter —Light and Water Cycle switch — Automatic time cut off switch — Voltage adjusting switch — Direct reading thermal regulator —Reactance Coil (cut power cost in half).



The Single Arc Model is a popular machine where high speed is not required.



FADE-OMETER

The recognized standard machine of the textile trade for determining the light-fastness of materials. Specimens are rotated around the Atlas Enclosed Violet Carbon Arc — the closest approach to natural sunlight. Temperature of the filtered air is automatically controlled. Proper humidity is furnished by evaporation from a constant-level water reservoir. Available with a wide variety of specimen holders and exposure masks.

• Originators and sole manufacturers of accelerated testing devices for a quarter of a century. Fade-Ometer, Weather-Ometer, Launder-Ometer are used all over the world as accepted standard testing machines.

ATLAS ELECTRIC DEVICES CO., 361 West Superior St., Chicago 10, Ill.

DRAPER
Dependable
SOAPS

For more than 85 years, DRAPER has been providing better soaps for better fabrics.

The Textile Industries long have known that "Depend on DRAPER" has real significance, for the users of DRAPER Dependable SOAPS are producing better cloth.

Write for a demonstration of DRAPER SOAP *quality.*

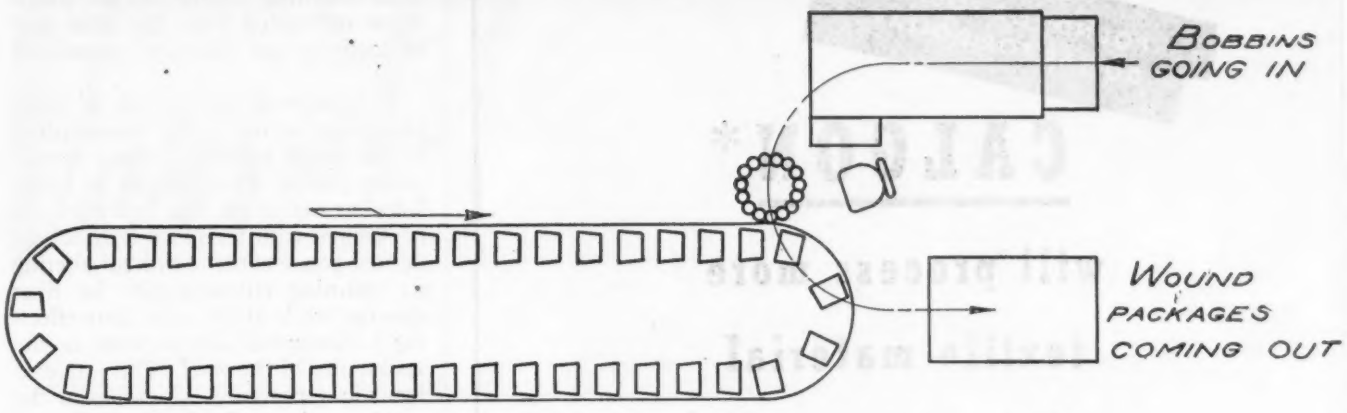
DRAPER SOAP CO.
DIVISION OF CONTI PRODUCTS CORP.
171 Front St. Tel. No. Perry 1806 Pawtucket, R. I.

then be conducted by gravity feed through pipes to the soap tank, or manually transferred in suitable containers without difficulty. Use of the stock solution was favored since it would permit addition of the phosphate to the cooling soap solution with uniform mixing produced by mechanical agitation, thereby avoiding boiling of the phosphate, which is somewhat sensitive to heat. As the mill trials progressed, some operators used the above procedure, while others preferred to dissolve the phosphate directly into the soap solution, using the dissolver bag in which it is packed, or a suitable cloth or metal screen. An all-metal dissolver screen, illustrated, was designed for this method of application. This device utilizes the unique bead form of the sodium tetraphosphate (shown in the head piece) to permit substitution of volume measurement for weight determination in making up the charge. That is, the container is calibrated in pounds, so that when it is filled to the proper volume, it contains the corresponding weight. Although the tetraphosphate may simply be dumped into the soap tank and dissolved by boiling, this method is not recommended.

The use of sodium tetraphosphate in the soap solution, following laboratory investigation, was adopted both by mills and commission scourers. The convenience of the application was greatly appreciated, while the improvement in the wool was as good if not better than that produced by the earlier procedures. All users reported better whiteness on all types of wool, while openness, hand, and odor were significantly superior to those obtained in the conventional soap-and-soda scour. The effect of the tetraphosphate upon residual grease was in many cases remarkable, the ether extraction decreasing in one instance from 0.5% to 0.1% on wool for the worsted system. The decrease in extractable matter was so marked that some mills expressed the opinion that difficulty in spinning would surely result. However, no problems have ever been reported and there is no evidence pointing to increased breaks or other indication of damaged or brittle fibers. There is, indeed, reason to believe that the tetraphosphate treatment actually reduces carding waste and improves the yarn. One or two commission scourers complained about the 0.4% grease reduction, saying that the increase in quality of the wool did not entirely compensate for this economic loss, but this was not a serious objection.

The mills and scourers were, however, unable to obtain satisfactory figures on soap economy because of the wide variation in types of wool handled within a unit of time. Thus it was im-

ABBOTT AUTOMATIC WINDER



The moving assembly line principle has always been the essential feature of Abbott winders and is not available in other makes.

The operator sits in one position, sets the full bobbins in a rotating magazine in front of her and doffs the full cones or cheeses at the same position.

There is no walking all day, stooping to pick up the bobbins, reaching over to tie them in, pushing trucks around the machine, etc. She works at the end of the winder out of the way of fly and dust. She does not have to strap a knotter to her hand and wiggle her thumb all day to tie knots.

As a result there is very little operator fatigue and yet the production in bobbins tied in per hour will average more than on any other equipment.

Any of the standard 6″ traverse packages can be wound—warping cones, knitting cones, wood or paper tubes.

The bobbins to be wound may be big or small, single or ply, warp, filling or combination wind, wood or paper.

Operators are quickly taught and maintain an even steady production.

The skill of winding is built into the machine.

ABBOTT MACHINE COMPANY

Main Office and Factory: Wilton, New Hampshire

Southern Representative: Mr. L. S. Ligon, Greenville, S. C.

POUND FOR POUND
DOLLAR FOR DOLLAR

CALGON*

will process more textile material than any other phosphate

Write for Technical Bulletin No. 3 "Calgon Data for the Textile Chemist." Address Calgon, Inc., a subsidiary of Hagan Corporation, Pittsburgh 30, Pa.

*Calgon is the registered trade-mark of Calgon, Inc. for its vitreous sodium phosphate products.

possible to establish the economic position of the tetraphosphate with any accuracy, since there was no way of determining whether its use added to or subtracted from the total cost of scouring one thousand pounds of wool.

It is believed that the use of tetraphosphate reduces soap consumption to the point where a definite overall saving results. This fact can be established as well as the fact that wool can be scoured with tetraphosphate to any desired grease content without altering its spinning characteristics by fiber damage, while at the same time effecting a substantial improvement in the appearance of the wool. This improvement in appearance, which has in the past been observed only in a qualitative manner, can be shown quantitatively.

Prof. Russell L. Brown, of Lowell Textile Institute, organized and directed with the assistance of the author a rather comprehensive program of research on the use of sodium tetraphosphate in the woolen industry. Work is continuing and an additional report will appear in the next issue of TEXTILE WORLD.

1 *U. S. Patents 2,019,665, 2,019,666, 2,031,827.*
2 *Fiske and Bryan, U. S. Patent 2,059,570.*
3 *Matthews, J. M., "Bleaching and Related Processes."*
4 *U. S Patent 2,059,570.*
* *Sodium tetraphosphate used was Quadrafos, the brand manufactured by the Rumford Chemical Works.*

R.D. COLE QUALITY

TANKS
TOWERS
STANDPIPES
STACKS
KIERS
KETTLES
VATS
AIR RECEIVERS
WELDED STEEL PIPE
DIGESTERS
BOILERS
FIRE
FABRICATED FRAMEWORK

MARITIME "M" MERIT AWARD

Tank Builders for over 80 Years

R. D. COLE MFG. CO.
Established 1854
NEWNAN, GEORGIA

Industrial Glasses

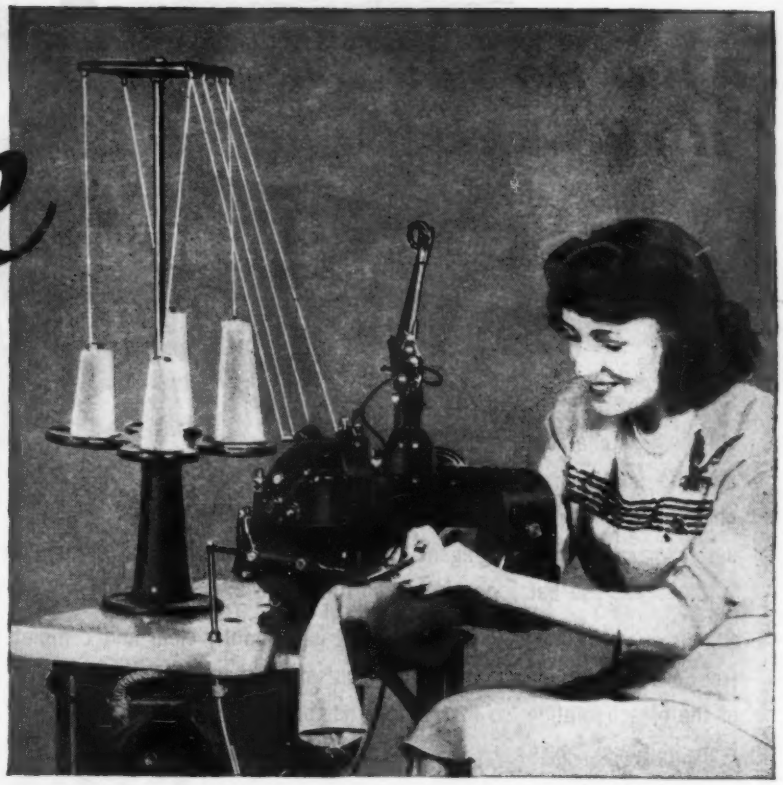
(Continued from page 153)

standard eye tests are given to the applicants, usually involves taking those that have the best eyesight. According to indications to be drawn from the experiments related, this practice is not advisable and another basis of selection or interpretation should be given to eye tests.

Whenever standard eye tests of the letter-reading type are given, the results should be interpreted in the light of the type of work that the employee is to be assigned. While many of the jobs about a knitting mill require normal vision, others require, for best results, that the eyes of the employee be other than normal.

For example, in selecting a looping operator the basis should be on near acuity and near muscle balance. In other words, this employee should be nearsighted and be able to see things at very close range without straining the eyes. A person with such eye characteristics will adapt herself more quickly and with little eye strain to looping. Also this person will likely be a greater producer in a short time than one with normal eyesight. It is important in selecting new employees

Versatile



Designed to meet the exacting demands of modern methods, the new "Feldlock" incorporates many features hitherto considered unattainable for feed-off-the-arm felling machines.

Not only is the "Feldlock" ideal for double and triple stitch lap seam felling operations on shirts, pajamas, woven shorts, slacks and such articles, but is also adaptable for fine seaming required on better grades of silk undergarments as well.

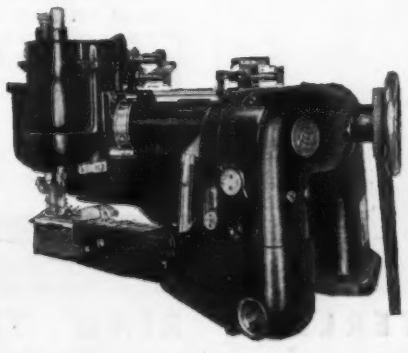
A forced-feed lubrication system, one of the finest ever conceived, is built into the "Feldlock." It is completely automatic. All moving parts are continuously flushed with oil, under pressure, by means of the Positive Drive Duplex Rotary Gear Pump.

At the present time, "Feldlocks" are hard to get —but—when conditions revert to normal—machines will be available in any quantity desired. It will pay you to wait for the new "W&G" "Feldlock."

Send for Illustrated Descriptive Bulletin No. 896.

Here are other special features of the "Feldlock"

- Accessibility to all working parts
- Duplex Foot Unit, facilitates crossing of seams
- Easy Threading Means
- Increased Accessibility for cleaning
- Needle Gauges: from 3/32" to 10/32"
- Self-Opening Arm Cap
- Self-Setting Needles
- Single Pedestal-Type Base, provides more work space
- Stitch Type: U. S. Standard 401



WILLCOX & GIBBS SEWING MACHINE CO.

214 West 39th St. New York 18, N. Y.

All of these characteristics; and they are all available in one silicate—Star. Here is a stabilizer and neutralizing agent for your peroxide baths, that is dependable, whether you use batch or continuous process.

Star is specially made to do the job. It is brilliantly clear and completely free of any suspended matter that might affect the clarity of the bleach solution, so that it does not break at high dilutions.

For uniform high quality bleaching results, specify Star Silicate. PQ SILICATES OF SODA

star BRAND

PHILADELPHIA QUARTZ CO. • Dept. A, 127 S. Third St., Phila. 6

Sterling
Ring Travelers
ENDS DOWN
Is the Traveler at fault? They usually are blamed for such troubles, and it may be that they are not correctly fitted to the worn condition of your rings. Send for our Service Men.
Southern Representatives
D. J. QUILLEN, Box 443, Spartanburg, S. C.
D. C. ANDERSON, Box 629, Cedartown, Georgia
STERLING RING TRAVELER CO.
FALL RIVER, MASS.

for looping that they be young, as there is less possibility that their eyes will be varied by the age factor. If an older employee is to be assigned to this type of work it is possible that industrial glasses will correct many of the factors, especially that of age.

INDUSTRIAL GLASSES. The use of industrial glasses is a recent development and one that the textile industry has not as yet considered seriously. In most instances such glasses are thought of as goggles to protect the eyes from injury. However, specially prescribed glasses may be used to advantage to reduce eye strain and assist the operator at work, but this field has been little explored to date. Some meager work that has been done in plants has been handled by ophthalmologists, and while expert in their field of work, many do not have an understanding of the actual conditions under which the operator must work. Accordingly, results have not been too satisfactory.

Looping operations offer excellent opportunities for use of special industrial glasses because of the nature of the work. Because of objections of many employees, such glasses may best be fitted to new employees as a part of the usual routine of induction. Old-time employees frequently feel that their rights are being tampered with when management insists that they submit to examination and are asked to wear glasses.

Specially prescribed glasses to meet the conditions of the eyes of each employee are required. In some instances glasses with a slight degree of magnification, as one and one-half power, are used.

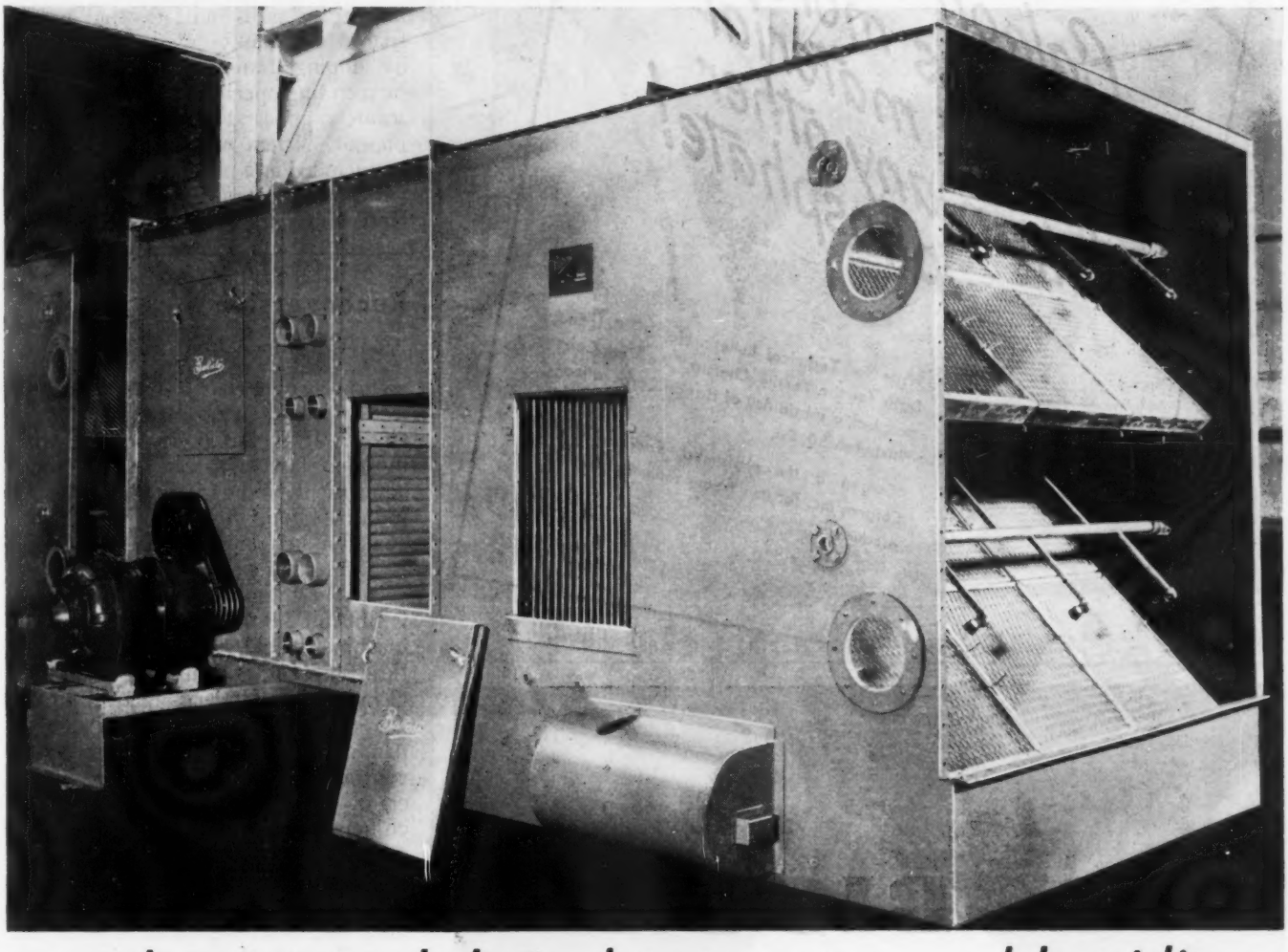
Prisms fitted to the glasses aid in permitting the operator to focus on the work at a close distance more readily. The prisms tend to correct muscle imbalances. Results of use of such glasses on looping learners and on experienced operators are shown in Figs. 1 and 2. In each case production increased.

Any program should be under the guidance of an accredited ophthalmologist who has specialized in industrial psychology and has a detailed knowledge of the working conditions of the knitting industry and of the various requirements involved in the different jobs.

One objection to any organized plan that may be evolved is that many of the workers may already be wearing glasses. Then others may have reading glasses.

Practically all of the glasses worn by operators are made to correct their eyesight to normal, but such are objectionable for looping and transferring operations. In such cases indus-

NEW *Improved* CONTINUOUS AIR CLEANING



and maintained desired temperature and humidity

WITH THE

New

"Buffalo"

Wet Glass Cell

AIR WASHERS

● Clean air is often just as much a production essential as tempered air. The new Buffalo Wet Glass Cell Air Washers provide both—continuously, efficiently, economically.

These Buffalo developed units actually remove up to 98.5% of all dust visible (without magnification) from the air stream. By careful test, it was also shown that 90% of all dust particles over ten microns in size are removed. In fact, practically all kinds of air born particles (pollen, soot, etc.) are nearly completely eliminated.

Several sizes of the Buffalo Wet Glass Cell Air Washers are available. All are easy to install and maintain, low in initial and operating cost. No expensive electrical hook-up required. Full details in Bulletin No. 3457.

Buffalo Forge Company

184 MORTIMER ST. BUFFALO, N. Y.

Canadian Blower & Forge Co., Ltd., Kitchener, Ont.

POUND FOR POUND
DOLLAR FOR DOLLAR

*Calgon will process more textile material than any other phosphate!

Write for Technical Bulletin No. 3 "Calgon Data for the Textile Chemist." Address Calgon, Inc., a subsidiary of Hagan Corporation, Pittsburgh 30, Pa.

*Calgon is the registered trade-mark of Calgon, Inc. for its vitreous sodium phosphate products.

ROBISON
Rayon Yarns

Filament and Spun Rayon Yarns
dyed and twisted to your specifications.

ROBISON PROCESSING COMPANY, Inc.
BOSTON, MASSACHUSETTS
New York Sales: 450 Seventh Ave.

trial glasses made to fit the requirements of the job should be provided as a part of the tools with which the operator works.

In experiments and tests conducted in industry it has been found that of those workers with reading glasses, in 75% of the cases the glasses were inadequate.

Present work with industrial seeing in knitting mills indicates that industrial glasses may be used to advantage by looping, transferring, and possibly by mending operators, but their use by seamers appears to be doubtful at present. When provided, they should be included as a part of the equipment with which the operators work and worn only under working conditions.

Reconversion

(*Continued from page* 173)

ers can assume that they will be subject to price controls for some months ahead. It is the policy of OPA to move as fast as it can toward price adjustment, industry by industry, or industry group by group, instead of company by company. Its objective is to have the procedures of price control as nearly automatic as possible. This is difficult in the case of the textile-machinery field, which, for all practical purposes, is composed of a series of industries. Under Directive No. 68 are set forth exemptions of certain manufacturing operations from price control. For example, the manufacturers of wood accessories for textile machinery (bobbins, spools, etc.) may qualify for suspension of price control under this directive. Items that will be exempted are ones where the price does not enter significantly into the over-all cost of the machinery and where continued pricing would cause a disproportionate amount of administrative work.

OPA's textile-machinery price controls will continue to operate under the following directives:

RMPR 136—the basic regulation which embodies the fundamental principles on which ceiling prices have been established for the duration of the war. Reconverting manufacturers may continue to sell at existing ceiling prices computed in this regulation if they choose.

SO 118—a guide to reconversion pricing for the "small-volume manufacturer," one whose net sales in 1941 did not exceed $200,000.

SO 119—a guide to individual adjustments for the large manufacturer.

Amendments to SO 118 and SO 119 may be expected from time to time. Example is the recent action of OPA under Amendment No. 3 to

UNION SPECIAL *Lockstitch*

wherever high production and low costs are prime factors

As shortages in supplies of sewed articles arise, the needle trades are called upon to put forth extra efforts to overcome them. Union Special LOCKSTITCH machines *for all plain sewing* are helping materially with this campaign for needed production. Their dependability, ease of operation, speed, and low cost of maintenance make them the ideal equipment during periods of heavy, rush demand such as we have today or during periods of highly competitive, normal business. Designed by Union Special Machine Company for long life and satisfactory performance, the LOCKSTITCH has established a sound reputation for getting results in sewing plants everywhere. Write for full information. UNION SPECIAL MACHINE COMPANY, 486 North Franklin Street, Chicago 10, Illinois.

MECHANICAL HIGHLIGHTS

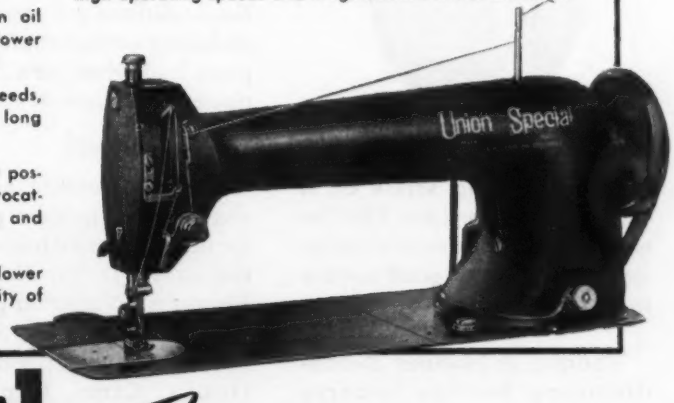
LEAKPROOF TRANSMISSION, completely sealed in oil bath, transmits rotary movement from upper to lower shaft with no belts, bevel gears or vertical shafts.

POSITIVE FEED produces uniform stitching at all speeds, a feature made possible by mechanism with no long pitman rods or long rock shafts.

DUAL MAIN SHAFTS carry rotary motion to furthest possible point before conversion to oscillatory or reciprocating movement. Less vibration, faster starting and stopping result.

SEALED ROTARY HOOK DRIVE is taken from lower rotary mainshaft by gears sealed in oil. The simplicity of construction insures low maintenance cost.

ROTARY HOOK, AUTOMATICALLY LUBRICATED, permits high operating speeds and lengthens the life of the hook.



Union Special *Machine Company*

World's Largest Exclusive Manufacturer of Industrial Sewing Machines

This Name Plate Has Been on a Three-Year Furlough

The "National" plant . . . greatly enlarged . . . has been going full tilt since shortly after Pearl Harbor; but there has been no need for name plates on critical parts for radar and radio, fire control apparatus, bomb bay doors and frames, machine gun mounts or turret floor braces. As the demand for these win-the-war products diminishes, the familiar "National" trade mark will take its place on ever-increasing numbers of textile, chemical, food and other dryers which are already on order or *will* be ordered when final restrictions are removed.

The "National" dryers that *have* been produced during the past three years are doing a noteworthy job on cloth for service uniforms, vitally important chemicals, and experimental drying and curing. Features of design and construction developed to meet these war-time requirements are now available in "National" dryers for post-war production. Orders will be completed in the sequence received.

Automatic Loop Dryers
Package Yarn Dryers
Print Goods Dryers
Truck Type Skein Dryers

NATIONAL

Straight Run Tenters
Return Type Tenters
Apron Stock Dryers
Continuous Yarn Dryers

THE NATIONAL DRYING MACHINERY CO.

WEST LEHIGH AVE. & HANCOCK ST., PHILADELPHIA 33, PA.

New England Agent—C. H. INGALLS, Providence, R. I.

Worn Parts Reconditioned
actually outwear new ones

For Example: **Rollers.** We turn roller down and shrink on a Thomas & Skinner Long Life Tire made from special wear-resisting material. We also grind surface to correct diameter.

Thomas & Skinner Reconditioning Service restores cams, gears and other parts for full-fashioned knitting machines to their exact original size and shape. And one special processing gives T & S Reconditioned Parts a more enduring surface than the same parts had when new. Satisfactioned guaranteed.

T & S Products

We manufacture an extensive line of quality products for full-fashioned hosiery mills including Jacks, Narrowing Plungers, Narrowing Chain, Friction Springs, Snapper Springs, Magnetized Sinker Hooks, Cams, Running-in Machines, Locking Dials.

Thomas & Skinner Steel Products Co.

1119 EAST 23rd STREET • INDIANAPOLIS 5, INDIANA

the directives by which manufacturers of textile machinery were given a reconversion profit factor of 6%.

EXPORTS. Before V-J Day it was estimated by a WPB spokesman that less than 1% of new textile machinery produced had been exported (exclusive of exports to Canada) and not a single new loom. The chart on page 175, prepared by the Department of Commerce for TEXTILE WORLD indicates the amounts of textile machinery and parts which have been exported for the first five months of 1945. (No information is yet available on the amounts sent to the Far East, but the total is included in the amount designated for "other countries") Department of Commerce experts estimate that from 90 to 95% of the items listed were used machinery or parts.

One of the problems to be solved involves the distribution of the output of textile machinery and parts by manufacturers, with some elements favoring concentration of distribution in the domestic market to meet urgent domestic needs, while others are stressing the need for the rehabilitation of the textile industry in other countries. Some officials favor continuation of postwar distribution in the same ratio both at home and abroad as before the war.

UNRRA Not Now a Market Factor

UNRRA's immediate needs will not affect the domestic textile market. It is hoped that textiles and clothing for relief purposes in Europe this winter will come, in large part, from government surpluses because of their availability. Relief in Europe is an immediate need and cannot wait for production schedules; shipments for winter should be made by Oct. 1.

Before V-J Day, UNRRA had been scraping the bottom of the supply barrel to meet her needs, using salvage and scraps from every country where possible. The clothing drive last spring brought clothing estimated to take care of 25 million people; clothing campaigns that are now underway in Canada, New Zealand, and Australia will greatly augment the supply.

Quantities of raw cotton and wool have been purchased and will be sent to the various countries in which UNRRA is working. From stocks of the United States, United Kingdom, and the British Dominions, 90,000 tons of raw wool have been obtained and about 25,000 tons were shipped by Sept. 1. Purchases of raw cotton totaled 400,000 bales; about 120,000 bales had been sent to the needy countries by Aug. 1. The entire

A tip on the teens

School days will be happier days when 'teen-agers wear LANASET*-treated clothes. For LANASET makes woolens washable . . . and washable woolens last longer and can be kept cleaner and fresher.

LANASET controls shrinkage and stabilizes the fibers so that the natural beauty, texture and absorbency of the fabric remain after many launderings.

This guarantee of new wear in children's wear holds promising possibilities for manufacturer, merchandiser, and consumer alike. LANASET-treated merchandise has already appeared in leading stores throughout the country. Our technical service is at the disposal of mills in applying LANASET.

AMERICAN CYANAMID COMPANY
TEXTILE RESIN DEPARTMENT
BOUND BROOK, NEW JERSEY

New York • Boston • Philadelphia • Providence
Charlotte • Chicago

Lanaset

FOR WOOL SHRINKAGE CONTROL THAT LETS THE WOOL BREATHE

*LANASET is American Cyanamid Company's trade-mark covering its melamine resin for controlling wool shrinkage. The process under which it is applied is covered by United States re-issue Patent No. 22,566.

POUND FOR POUND—DOLLAR FOR DOLLAR

CALGON*
will process more textile material than any other phosphate

Write for Technical Bulletin No. 3 "Calgon Data for the Textile Chemist." Address Calgon, Inc., a subsidiary of Hagan Corporation, Pittsburgh 30, Pa.

*Calgon is the registered trade-mark of Calgon, Inc. for its vitreous sodium phosphate products.

All Textile Cutting Needs
ARE PROVIDED FOR BY EFFICIENT
TAYLOR-STILES CUTTERS

There are cutters in this line of efficient machines to cut tangled fibers, waste, and cloth for shoddy.

Other types of cutters, for wet or dry cutting, are used where uniform length of cuttings is required, as in making rayon staple, used by many of America's leading yarn manufacturers and textile mills.

No. 1-F is for cutting waste and similar yarns.

Let us know your textile cutting needs.

TAYLOR-STILES & COMPANY
15 BRIDGE ST. RIEGELSVILLE, N. J.

amount is scheduled to be sent by the end of the year. It is expected that this will meet immediate needs and will cut down demands on the domestic textile industry.

UNRRA has active textile and clothing programs in Greece, Albania, Poland, Czechoslovakia, Yugoslavia, Italy, and China, and is sending in raw materials.

Further funds are necessary to carry out essential programs. The relief organization wants Congressional action which will give it $500,000,000 of the remaining original U.S. authorization. Congress originally approved $1,300,000,000 and authorized immediately appropriations for $800,000,000. It is too soon to estimate requirements for next year. Much depends on how quickly industries in aided countries are rehabilitated.

Textile Surpluses Not Pressing Problem

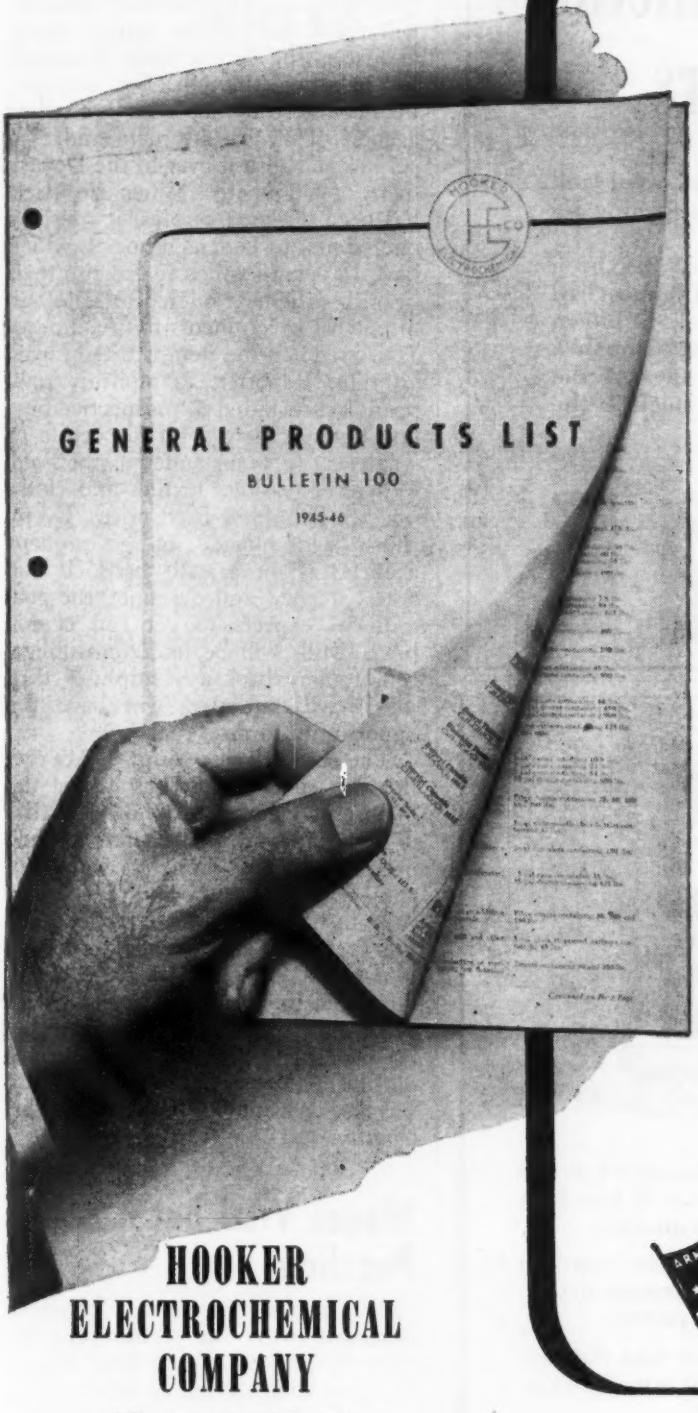
In estimating the amount of goods that will be declared surplus, it is well to bear in mind that cancellations of orders by the Armed Services immediately after the defeat of Japan is not a true index. These orders related to future deliveries, much of them not even in the works. Until such time as the Army and Navy complete their check on the status of their orders at the time of cancellation and until they give an indication of their inventories of surpluses, it is impossible to judge the magnitude of the disposal problem ahead.

Contrary to the popular idea that an "avalanche" of goods would descend upon the market after V-J Day, it now appears that surpluses, generally speaking, will be slow in reaching the civilian market. It has been stated that much less cloth, both of materials made of wool and of cotton will be declared surplus at this time than many textile mill owners had anticipated.

This inventory, it is believed, reveals large quantities of goods. Surplusses may become a serious problem a few months from the present time for the industry.

Drag items may be those that are adaptable to unusual climates or uses, such as arctic and ski equipment. The Army has announced that it will have among its "best sellers" sheets, pillows, towels, and sleeping bags, which will be sought by state institutions, relief organizations, etc., which get first chance. Officials handling surplus-goods disposal in the Commerce Department say that by the time any one item has been cleared by state and Federal priorities, etc., it will not be in

Seven New Chemicals Have Been Added to Hooker's General Products List



What is the boiling range of Hooker Monochlorbenzene? What is the chlorine content of Hooker Sulfur Dichloride? Is Lauryl Chloride a liquid or solid and what are some of its uses? In what size containers is Hooker Cyclohexanol shipped?

This is the type of information you will find in the new edition of the Hooker General Products List of nearly 100 Chemicals. Seven of these are new developments making their first appearance among the other Hooker Products.

A copy of this new bulletin which gives descriptions, principal specifications, uses and shipping information will save you time and trouble in selecting chemicals for your requirements.

When in need of chemicals, make it a habit to look at the Hooker General Products List. In that way you can be sure of the uniform high quality and purity that have been pleasing users for years. Technical Data Sheets and samples of products in which you are interested will be sent on request. Our Technical Staff will be glad to assist in the application of chemicals to your particular problems.

Take the first step in getting acquainted with Hooker by sending for this new edition of our General Products List.

Just type your name and "Bulletin 100" on your letterhead and a copy will be sent to you.

HOOKER ELECTROCHEMICAL COMPANY

4 Forty-seventh Street
Niagara Falls, N. Y.

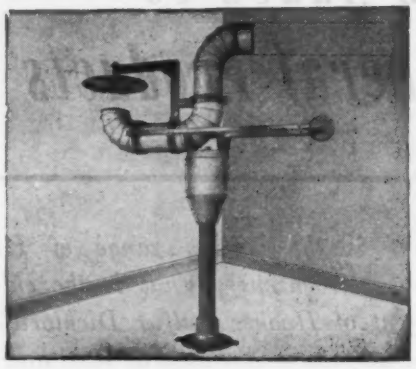
New York, N. Y. Tacoma, Wash.
Wilmington, Calif.

ARMY (E) NAVY

HOOKER CHEMICALS

Caustic Soda	**Muriatic Acid**	**Sodium Sulfide**
Paradichlorbenzene	**Chlorine**	**Sodium Sulfhydrate**

8323



Thorough Blending Synthetic Fibers

TRUSLOW* BLENDER (patented)

Completely thorough blending of spun rayon, wool and cotton with fibers of other raw materials is becoming increasingly important.

The Improved New Model Truslow Blender has been developed to provide thorough blending of almost all types of natural or synthetic fibers. The stock is blown through piping to the Blender. It then passes through a rotating arm and is blown up against the vanes of the canopy—making it revolve and distribute the stock in the form of a heavy snowstorm.

*Reg. U. S. Pat. Off.

Curtis & Marble
MACHINE COMPANY
WORCESTER, MASSACHUSETTS.

DIASTAFOR de-sizing agent is the acknowledged leader in its field. And its leadership is based on performance . . . actual results that show its superb quality.

Smooth, supple, flawless fabrics are assured when you use DIASTAFOR. There's never any danger of discoloration or impaired tensile strength. Your fabrics look and feel perfect.

Yes—DIASTAFOR is worth knowing about. Now take the next step—*try* DIASTAFOR. Then you'll see for yourself why it is first in its field.

For further information, ask our technical man or write to—

FLEISCHMANN'S DIASTAFOR

Diastafor Division
STANDARD BRANDS INCORPORATED
595 Madison Avenue New York 22, N. Y.
DIASTAFOR • *37 Years of Satisfactory Results*

sufficient quantity to constitute a menace to the textile market. There are persistent reports circulating in Washington that Wright Field has a quantity of silk (some of which has been in stock for two or three years, but almost all of it usable) to be declared surplus soon.

SLOW TO REACH CIVILIANS. One of the chief reasons why surpluses will reach the civilian market slowly at first is the cumbersome procedure for handling the job. For example, neither the Army nor Navy is a selling agency. They declare merchandise as surplus and turn it over to the Department of Commerce. When an article has been declared surplus, it must be offered first to Federal agencies, which have 18 days in which to exercise their priority. It is next offered to state and municipal governments for a period of 12 days. Then the item is listed in the "Surplus Reporter," a monthly publication distributed to prospective buyers. Time is allowed for inspection of whatever is being offered for sale. Wherever feasible, textiles and clothing will be sold at fixed prices. Everything sold outside of government agencies is on a cash basis. If the goods are new and desirable, the government expects to get full ceiling price. Mills will be under no obligation to buy back any surpluses they may have, but they will have the opportunity to do so.

The setup of the Surplus Property Board itself is regarded as one of the important elements complicating the disposal problem. It is at present made up of three men. Congress will probably centralize authority in a single Administrator, as recommended by the President, and provide for better integration of the various agencies interested in surplus disposal.

Definite procedures have already been set up for goods declared surplus outside of the United States. These surpluses will not be returned to this country.

Wages Vital but Puzzling

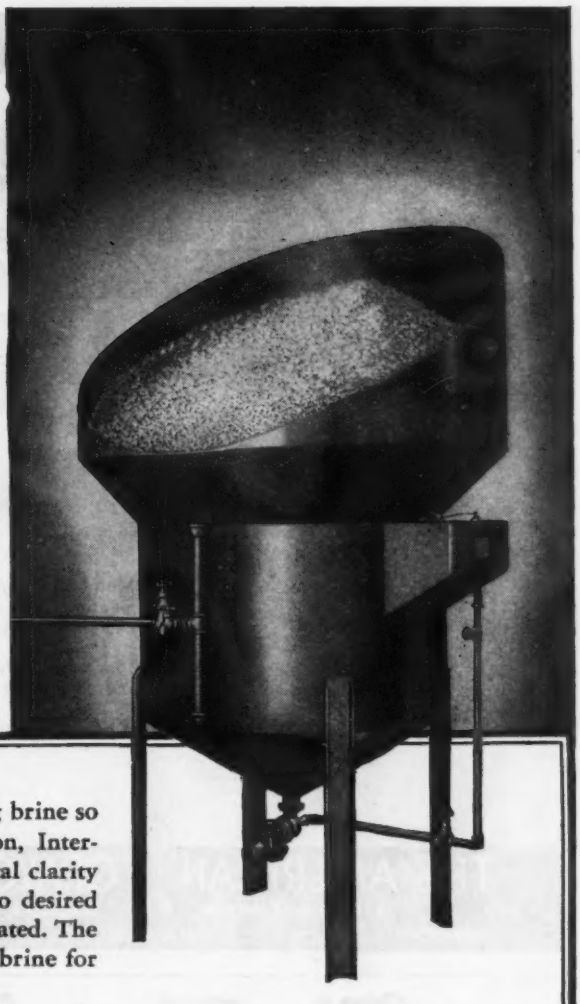
The question of wages is generally conceded to be one of the most important and at the same time one of the most difficult and harassing problems of the reconversion period. Millions of war workers are being released from high-paying jobs. Overtime pay is being greatly diminished. Many elements in labor are taking the shorter work week for granted. Organized Labor is deeply conscious of its obligation to maintain, if not to increase, the basic wage in this change-over

Troubled with

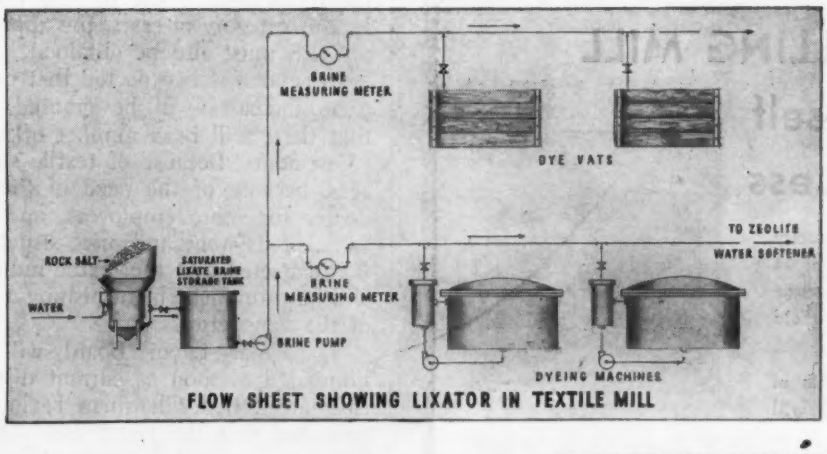
SPOTTING . . . STREAKING . . . WHITE EDGES?

Not when you use LIXATE BRINE!

YOU CAN ELIMINATE a common cause of uneven dyeing by using Lixate brine instead of dry salt as your dye exhausting agent. This crystal-clear brine is fully saturated . . . disperses uniformly throughout the dye bath . . . contains no undissolved salt grains to accumulate in the vat and cause uneven exhaustion of the dye.



PERFECT BRINE! No other method produces perfect dyeing brine so easily and inexpensively. Entirely automatic in operation, International's Lixator produces 100% saturated brine of crystal clarity from inexpensive Sterling Rock Salt. Accurate dilution to desired brine strength is easy when the original brine is fully saturated. The Lixator shown here is typical of those producing perfect brine for level dyeing in textile manufacturing.



FLOW SHEET SHOWING LIXATOR IN TEXTILE MILL

EFFICIENCY IS INCREASED as this flow sheet shows. Piped to wherever it is needed in your plant, Lixate brine is instantly available in required amounts, helping speed up production . . . saving the time and labor of transporting dry salt and making brine. Further, by eliminating salt waste due to handling, spills, and dissolution in storage . . . Lixate users report savings up to 20%.

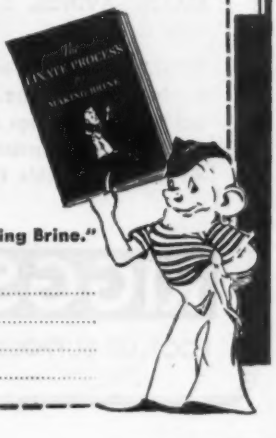
The LIXATE *Process*
Reg. U. S. Pat. Off.
for making brine

★ ★ ★

INTERNATIONAL SALT COMPANY, INC.
Scranton, Pa.

Get Further Facts About LIXATE BRINE!

Free booklet explains the Lixate process in complete detail with many pictures of different types of installations. Also illustrates the flexibility and adaptability of the Lixator to meet any brine requirements and any structural limitations. New edition also contains complete sodium chloride brine tables.



International Salt Company, Inc.
Dept. TW-9, Scranton, Pa.

☐ **Send free copy of "The Lixate Process for Making Brine."**
☐ **Have your field engineer call.**

Name.....
Firm.....
Street.....
City..... *State*.....

Made by crayon experts—and for many years meeting the exacting requirements of wool, cotton, silk and rayon textile mills.

18 clear, easily distinguished colors. Both large and small stick crayons.

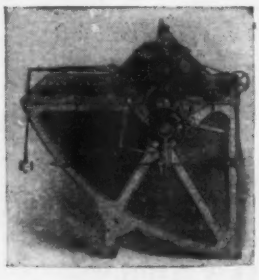
Write to Dept. T-2 for a FREE chart showing these colors!

THE AMERICAN CRAYON COMPANY
1706 HAYES AVENUE, SANDUSKY, OHIO
NEW YORK SAN FRANCISCO DALLAS

The Fleet Line

STAINLESS FULLING MILL

How It Pays for Itself In Three Years or Less



INCREASED PRODUCTION. The big capacity mill can handle 12 pieces of men's wear or 14 pieces of dress goods in one load. Average installation in larger sizes replaces 2 or 3 old mills.

LOAD FLEXIBILITY. Even the large mills of 800 lbs. nominal capacity (in 12 pieces) will handle 4 or 2 pieces.

MAJOR SAVINGS. Soap—about 20%; dead loss—10% to 25%; fulling time—10% to 33%.

OTHER FEATURES include position changers which will change positions of pieces while running, effecting more uniform fulling and preventing creases • full elliptical springs for positive and uniform pressure • uniform and superior finish due to reduction in dead loss, stainless steel parts, etc. • vertical sliding doors • adjustable front guides • adjustable stop motion • roller bearings.

RIGGS AND LOMBARD
FOOT OF SUFFOLK ST., INCORPORATED LOWELL, MASS.

period. Wage controversy could lead to strikes that would set back production, delay the volume of output of civilian goods, increase the unemployment load and extend its duration.

Government is anxious to maintain a wage scale that will sustain a large volume of purchasing power. One of the Administration's primary objectives is to hasten the day when wages will again be determined by voluntary agreements reached through collective bargaining between employers and employees. For the time being, however, the Administration is committed to economic stabilization; it will continue to exercise some controls in order to hold the line against run-away wages and prices.

President Truman and War Mobilization Director John W. Snyder have piloted a middle course. They have given general directions for the guidance of employers, wage earners, OES, WLB, and OPA. Here is the gist of it:

NEW WAGE PATTERN. Wages may be increased through voluntary agreement between employers and employees without reference to any governmental agency, provided the increases will not raise prices to the consumer but can be absorbed in the course of manufacture and distribution. The WLB is authorized to grant wage increases in special hardship cases even where it is necessary for OPA to make price-ceiling adjustments to protect the manufacturers. In this category of cases, the approval of OES must also be obtained.

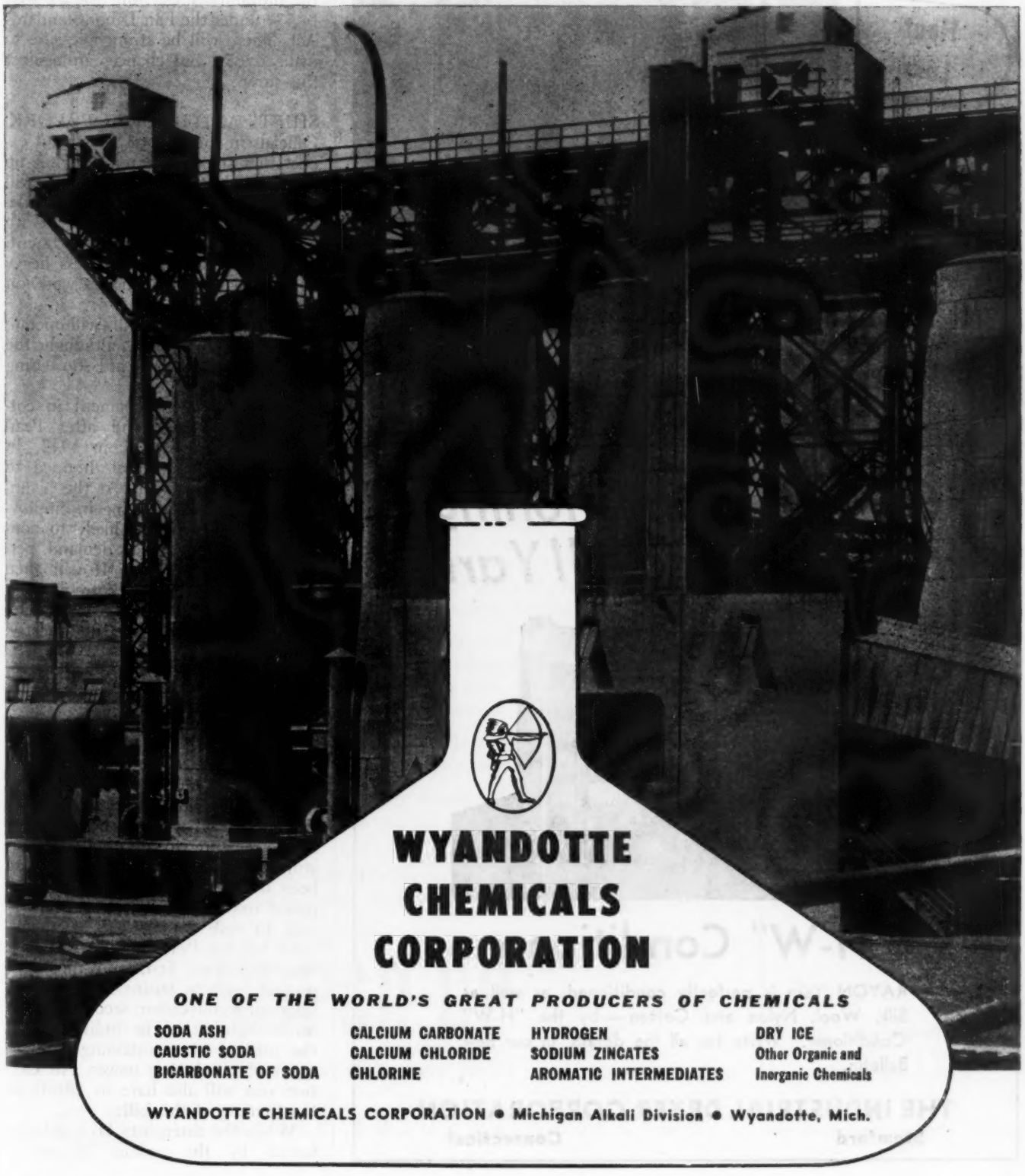
In general it is expected that many wage increases will be granted and that there will be a number of price adjustments. Because of textile shortages, because of the need of the industry for more employees, and because of its wage and price structure, it is expected that the textile industry will be prominent in furnishing a test of the new setup.

The War Labor Board will be liquidated as soon as current dispute cases are settled. Chairman Taylor has indicated that the board will not attempt to use compulsion to enforce its findings in the short period remaining for it to function. Meantime plans are underway for a conference in Washington between management and labor for the purpose of reaching agreements on ways and means to minimize the interruption of production by labor disputes in the reconversion period. This is a large order. Whether or not Labor Secretary Schwellenbach calls such a conference depends on how much he believes can be accomplished by the two groups at this time.

It is the desire of the Administration to build up a strong Labor De-

LIMESTONE INTO CHEMICALS

These 135-foot kilns of the Wyandotte Chemicals Corporation at Wyandotte, Michigan, handle many hundreds of tons of limestone every day. From the grey-white rock rich in calcium carbonate come soda ash and other basic materials which are the sources of the long list of Wyandotte chemicals.



WYANDOTTE CHEMICALS CORPORATION

ONE OF THE WORLD'S GREAT PRODUCERS OF CHEMICALS

SODA ASH	CALCIUM CARBONATE	HYDROGEN	DRY ICE
CAUSTIC SODA	CALCIUM CHLORIDE	SODIUM ZINCATES	Other Organic and
BICARBONATE OF SODA	CHLORINE	AROMATIC INTERMEDIATES	Inorganic Chemicals

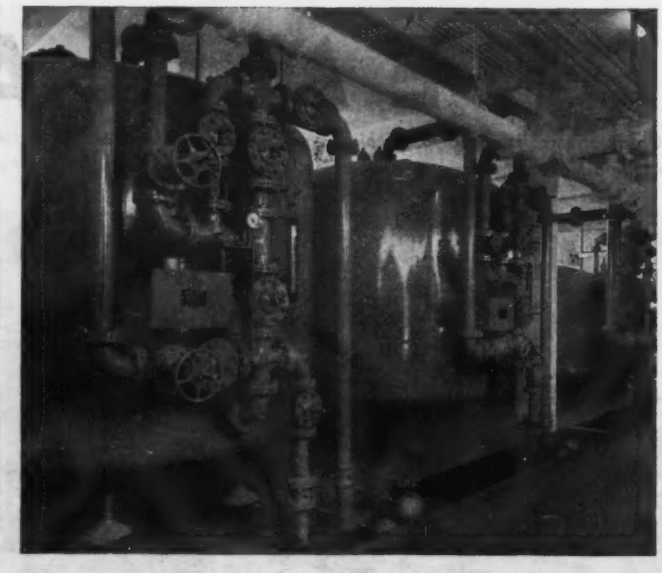
WYANDOTTE CHEMICALS CORPORATION • Michigan Alkali Division • Wyandotte, Mich.

SOLVING THE PROBLEMS OF PROBLEM WATERS!

Boiler Inefficiency

Heat Loss

Processing Troubles

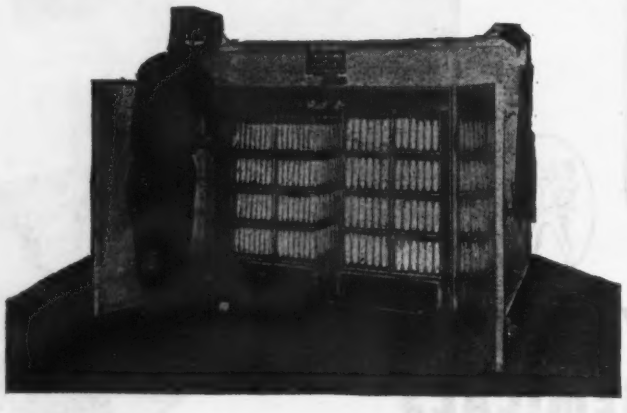


Refinite designs and manufactures a complete line of water refining equipment for the textile industry . . . iron removers, softeners, filters, demineralizers . . . simple in design and operation, efficient, and durable. Write today for literature on Refinite Equipment.

The Refinite Corporation

107 Refinite Bldg., Omaha, Nebraska

Correct Conditioning for Rayon and All Yarns



"H-W" Conditioner

RAYON Yarn is perfectly conditioned, as well as Silk, Wool, Nylon and Cotton — by the "H-W" Conditioner. Write for all the details, in our new Bulletin.

THE INDUSTRIAL DRYER CORPORATION

Stamford Connecticut

partment in the postwar period. The Conciliation Service of the Labor Department is expected gradually to take over WLB's mediation and arbitration functions. Also the National Labor Relations Board will probably be transferred to the Labor Department.

Government experts say that textile workers will keep their war gains after overtime deductions are made; unions will press for additional wages to bring them up to the regular wage plus overtime.

Congress can be expected to raise the minimum wage from 40¢ an hour to 55¢ under the Fair Labor Standards Act. There will be strong pressure to make it 65¢, but chances are against this jump.

SHIFTS AND HOURS OF WORK. Officials in the Labor Department expect that since most mills are set up for a two-shift arrangement, they will return to that schedule. The bottleneck in mills turning out coarse cloth has been in the carding department; a return to production of less heavy goods will tend to equalize work on the two shifts.

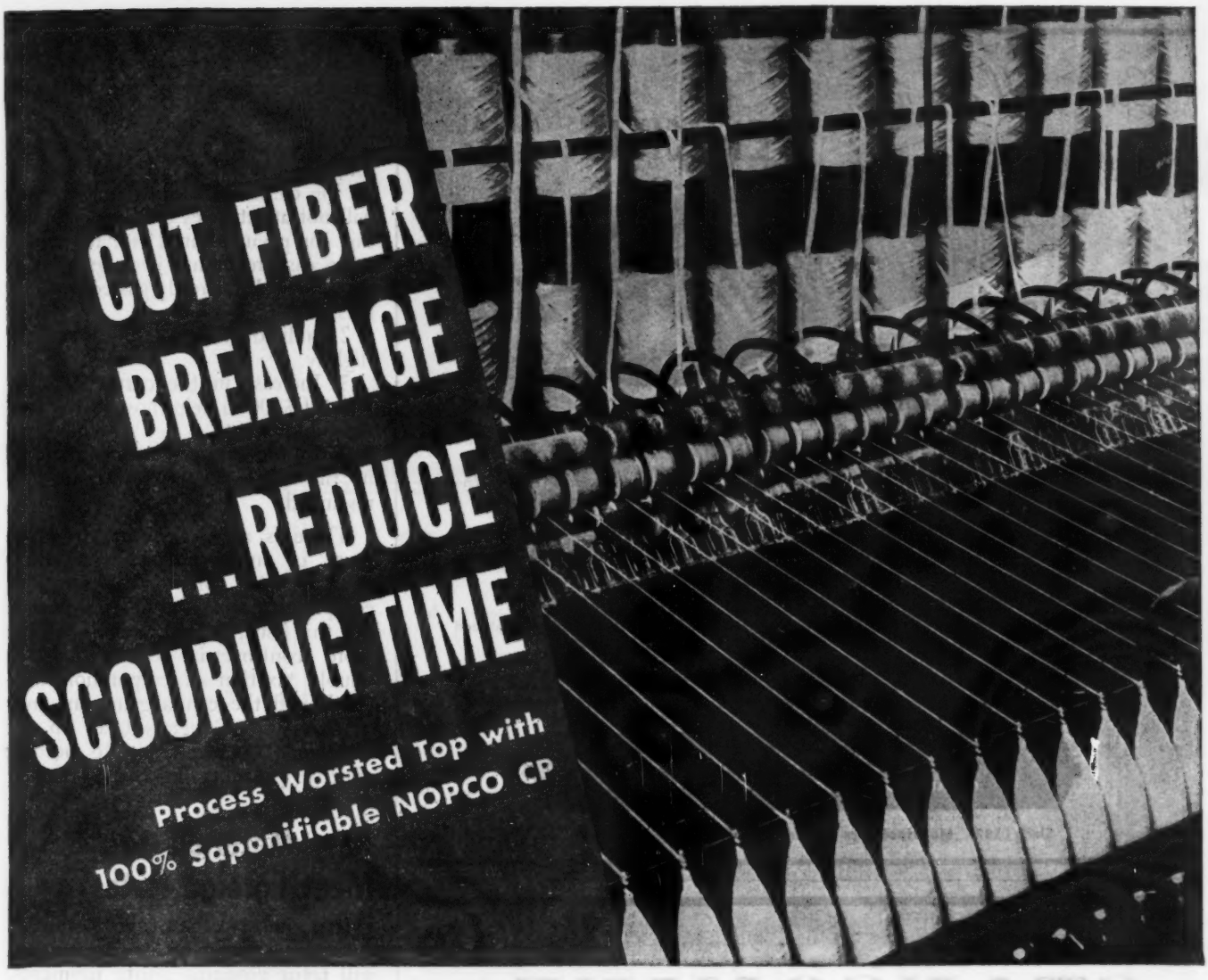
It is expected that mills will operate on the 40-hour week, although the general tendency is toward shortening the hours of work.

Rapid rise in employment in cotton textiles before and after Pearl Harbor reached a peak in 1942. In 1944, employment level dropped to the lowest since 1940. At the beginning of 1945, an upswing in employment started which is likely to continue until supply meets demand, perhaps reaching 450,000. It will then drop to a level that will correspond to 1939, unless something revolutionary happens in the cotton-textile industry.

New Tax Bill for 1946 Only

The framing of a new tax-relief bill is one of the "musts" on the calendar of the reconvened Congress. However, this legislation will not be the long-range measure to overhaul the tax structure for the postwar era that had been under study. This will be postponed until later, while Congress will seek to rush through an emergency relief bill for 1946 only. It will have two objectives: first, and most important, to help business in the early stages of reconversion; second, to give some slight relief to individuals in the interest of maintaining a maximum of purchasing power. An election year will also have its effects on the framing of this bill.

While the emergency tax-legislation forced by the sudden advent of



NOPCO CP, in addition to reducing fiber breakage to a minimum, prevents fly or waste in carding, drafting and spinning. Reduces static. Imparts drag equal to that of olive oil. Has excellent spreading power.

MORE UNIFORM LUBRICATION. Commercial dyers and finishers of worsted yarn treated with NOPCO CP report ease of scourability. Residual oil content usually well under .5%, thus permitting level dyeing and brilliant, clear-toned shades. Highly recommended for yarn dyed in package form.

REAL SOAP SAVINGS. Direct soap economy effected in scouring because NOPCO CP is 100% saponifiable. Reduces scouring time.

SAFE. For top, yarn, or goods in the grey storage. Safe for resin finishes for shrinkproofing. Highly resistant to oxidation. Leaves no rancid odor in finished goods.

For more complete information, write the NATIONAL OIL PRODUCTS COMPANY, HARRISON, NEW JERSEY—Branches: Boston, Chicago, Cedartown, Ga., Richmond, California.

NOPCO CP

100% Saponifiable Worsted Oil

NOPCO
Reg. U. S. Pat. Off.

EVOLVED THROUGH RESEARCH

OTHER NOPCO CHEMICALS FOR

Textile Processing

Wetting and Rewetting Agents

Waterproofing Compounds

Soaking Treatments

Penetrants

Kier Assistants

Cationic Type Softeners

Detergents

Wax Emulsifiers

Every mill can use

JENKINS METAL CORE

CYLINDER BRUSHES

with Nylon or pure natural bristle

Use Them in the clothroom on shears and brushing machines for cotton, rayon and woolen fabrics.

Use our Nylon bristle brush in printing as furnisher brushes for applying color. The nylon bristle and metal core can be washed clean of color in a few seconds.

Use them for raising and laying.
Use them wherever even, unvarying pressure is required, where brushes must stand hard wear without sagging, where frequent cleaning is necessary, and where brushes must be stored while not in use.

Use Jenkins Flock Brushes.

JENKINS METAL CORES Cannot sag or get out of alignment. **Bristle** can be replaced when worn.

Nylon Bristle lasts longer and will not soak up dirt or color.

Write for your free copy of our 20 page illustrated booklet of industrial brushes

M. W. JENKINS' SONS, INC.
CEDAR GROVE, ESSEX COUNTY, NEW JERSEY

Since 1877 Manufacturers of Industrial Brushes Exclusively.

STANSOMINE:

For all cotton fabrics.

Increases the speed and efficiency of boiling off and scouring operations. Improves the bleach. Produces a softer finish. Effectively emulsifies oils, starches, waxes. Ensures uniformly brilliant dyeing.

Our laboratory and chemists are at your service to render information and assistance in solving your problems.

Samples and quotations gladly furnished upon request.

Standard Soap Co. of Camden

205 South 2nd St.
CAMDEN, N. J.

G. TANGUAY
281 Harris Ave., Woonsocket, R. I.

V-J Day is still in the thinking and planning stage, it is expected that it will be framed along the following general lines:

1. Outright repeal or drastic reduction of the War Excess Profits Tax on the corporate earnings of 1946. It will not affect taxes on 1945 earnings due for payment in 1946, for which some cash relief has been granted in the interim bill already passed by Congress.
2. Individual rates will be reduced slightly.
3. Increase in the current exemptions of $500 to help those in the low-income brackets.
4. In the main, wartime increases in the excise tax structure will be rescinded.

There is a very definite trend in favor of more liberal depreciation allowance on plant structure and equipment during the postwar period; but this issue, as well as many of the more controversial ones, such as double taxation of corporation dividends and the capital-gains tax, may go over until Congress takes up the long-range tax legislation to become effective probably Jan. 1, 1947.

Raw Materials to Meet Foreign Rates

It is almost certain that Clinton P. Anderson, Secretary of Agriculture, will favor dropping parity payments, export subsidies, and income payments on raw cotton. He believes that it will be possible to price cotton so that it can compete with foreign-grown cotton prices and with synthetic fibers in the domestic market. To accomplish this will mean that cotton production will be confined largely to low-cost producers and to the lands best suited to its production, also to the use of mechanical farming equipment.

Indications point to revolutionary changes in the South. Some persons estimate that as many as 4,000,000 or 5,000,000 common laborers in the South will move to other sections where greater opportunities exist for common and semi-skilled workers. Industry in the South will provide jobs for some of the displaced farmers and farm workers, but with the growth of industry there is bound to be a movement of skilled labor to that section of the country.

Indications in the wool field are that the government is planning price reduction to a competitive basis with imported wools which have been doing nearly all of the civilian business. No fabric price reductions to the consumer would necessarily follow.

ONYX

ONYXSAN*

A group of superior cationic finishing agents

For soft handle and other special effects, Onyxsan,* a group of superior cationic finishing agents, have established production records, both in quality and quantity, never equalled. The Onyxsan* group of cationic finishing agents are substantive to cellulosic fibers and produce a wash resistant finish of exceptional quality.

If you are not using Onyxsan investigate these superior Cationic Finishing Agents. We will be glad to send samples or demonstrate their effectiveness in your plant. Your inquiries are solicited.*

*Patented

35TH ANNIVERSARY YEAR

onyx

ONYX OIL & CHEMICAL COMPANY

JERSEY CITY, N. J.

CHICAGO • PROVIDENCE • CHARLOTTE

In Canada: Onyx Oil & Chemical Co., Ltd.; Montreal and St. Johns, Que., Toronto, Ont.

FOR *Reconversion*

AIR-PERME-ATOR

—is prepared to afford all-year-round air conditioning for those who are reconverting and desire to resume production under more efficient conditions.

Controlled humidification is as essential as mill equipment itself.

Air-Perme-Ator "Dry Humidification" has proved its merits in scores of mills.

Write to-day for Leaflet "T" containing complete details.

AIR-PERME-ATOR MFG. CO.

8 Stout Street **Paterson, 2, New Jersey**

NE-BOW "U.S." RING TRAVELER

for throwing silk and rayon

Developed to meet the particular needs of the silk and rayon trade in the process of throwing, due to the adoption of the vertical ring, particularly of the lubricating type.

By eliminating the pivoting action of the traveler, the traveler is at all times kept in close contact with the groove or device for lubricating the ring and assists in drawing therefrom the lubricant, distributing the same evenly over the entire inner surface of the ring; promoting a longer life to the traveler and a more even twist.

PERFECT BALANCE Weighs same on both sides. Straight part of shank is in center of gravity. Distributes lubricant and wears evenly. Will not pivot twisting self and rayon.

THE NE-BOW Prevents yarn ends flying out, provides ample headroom for threading—prevents binding on ring. Note "bend Inward" at top of horn.

HEAT CONTROL for better metal—dominates "U.S." production! Carburizing and tempering ovens are electrically controlled through pyrometers—for better performance.

● SOLD UNDER THESE TRADE NAMES

Bowen Round Point Travelers
Bowen Square Point Travelers
Bowen Improved Vertical Bronze
Bowen Patented Bevel Edge
Bowen Flat Oval and Round Wire Traveler
Bowen Patented Ne-Bow Vertical
Bowen Patented Vertical Offset

U.S. RING TRAVELER CO

AMOS M. BOWEN
President and Treasurer

PROVIDENCE RHODE ISLAND

Oilless Bearings

(*Continued from page 159*)

can be drawn upon when normal oiling is prevented by the presence of trash, lint, or dirt. Oiling cycles may be lengthened by this method.

Other advantages result from the proper use of the oilless bearing. The bearing or bushing lasts indefinitely because it does not allow the supply of oil to run off. Instances are known where spinning bolsters bushed with oil-impregnated, powdered-metal bronze have operated four years without a sign of wear. Mill maintenance engineers state that the spindles were oiled as usual and that the purpose of the installation was to improve spindle operation and to eliminate dry, vibrating spindles.

BEARING TOLERANCES. In such parts as spindles and card-cylinder bearings, there are certain precautions which must be observed if proper installation of the powdered-metal bearing is to be obtained. Bearing tolerances should be accurately determined, since powdered-metal bearings are manufactured to close tolerances. The mill can obtain them for close set-ups of various parts, or they can be purchased for loose fits. If too loose, the bearings will not allow a snug line-up of parts; if too tight on a fast-moving part which is out of line, the bearing will not be satisfactory.

It is also important to obtain the proper percentage of porosity for the bearing, bushing, or part. Powder metallurgy has discovered many methods of mixing the metal content of bearings and parts so that a wide range of porosity, oil content, and strength may be produced. Powdered-metal filters can be manufactured with 40 to 50% porosity, bearings with 25 to 35%, and mechanical parts with 20 to 30%. Oil content varies with the porosity, and high strength can be obtained with the low-porosity metals. Solid-bar stock, cored bars, plates, and even oil-impregnated rivets are manufactured in varied porosities and strengths.

A glance at the manufacturing processes of powdered metallurgy gives a clearer understanding of the factors which govern the use of bearings. In one well-known company, the various metals are carefully weighed before processing and the metal particles which form the powder are tested for particle size and hardness. The powder is screened and then entered into powerful presses where accurate dies press the powders into the desired

For a filament acetate size with HIGH LOOM EFFICIENCY

Try CETASIZE

This high quality protein powder also offers these 6 ADDITIONAL ADVANTAGES

OUR LINE OF TEXTILE STARCHES GUMS, DEXTRINES AND SPECIALTY MATERIALS ALSO INCLUDES:

W GUM D and VICTORY K2W GUM
For sizing staple synthetic yarns and blends.

RTF GUM
For laundry resistant finishes.

KAC No. 4 with B2 or SUSSEX GUM
For use in Printing . . . higher color yield.

96R and VELVEEN XX
For sizing cotton.

RTC GUM
For sanforizing and weighting.

CETOSOL SF
For starchless finishes.

SHO-PAL THICKENER and BINDER
For pigment printing and pigment dyeing in water dispersions . . . excellent wash fastness.

1. **Complete uniform product.**
2. **Size easily removed.**
3. **Runs clean on the machine—no foam.**
4. **No softeners required.**
5. **Easily prepared.**
6. **Replaces other sizing materials which may be difficult to obtain.**

An increasing number of plants are enjoying these values in their regular production. Whether you're weaving rayon now or planning to weave it after the war, prove for yourself that CETASIZE is the answer to your filament acetate warp sizing problem.

ORDER A SAMPLE TODAY—
AND ASK FOR A DEMONSTRATION

79 YEARS OF STARCH SERVICE

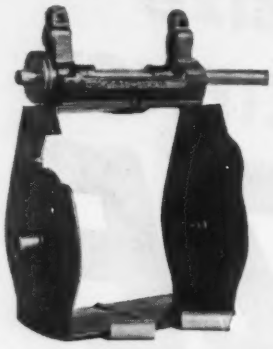
STEIN HALL

285 MADISON AVENUE • NEW YORK 17, N. Y.
2841 SOUTH ASHLAND AVENUE • CHICAGO 9, ILL.
250 VAN HORNE STREET • TORONTO, CANADA

LABORATORIES AT: NEW YORK
CHICAGO • CHARLOTTE • PROVIDENCE
LONG ISLAND CITY, N. Y.

EST. 1866

A TEXTILE STARCH FOR EVERY TEXTILE PURPOSE



Recondition your CONER-HEADS

Style #50 Universal Coner Heads can be reconditioned with bronze bushings, new shaft and new pulley at a great saving to you.

Write for prices and full details.

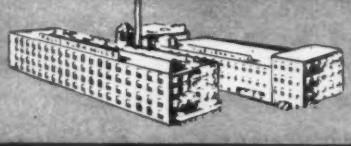
Wayne Manufacturing Co.
Honesdale, Pa.
Manufacturers & Textile Mill Supplies

Fallspun

QUALITY
YARNS

FINE WOOLEN
& SPECIALTIES

ESTABLISHED 1904



Falls Yarn Mills
WOONSOCKET RHODE ISLAND

shape. It is then necessary to melt down one of the metals in the mixture so that the mass will be bound together. One of the metals is selected for the role as binder, and the process

Opening & Picking
- Pin- & lattice-apron shafts
- Combing & doffing rolls
- Feed rolls
- Beaters
- Conveyor-apron shafts
- Draw rolls
- Screen shafts
- Evener studs
- Calender rolls
- Loggerheads
- Hunting-tooth knock-off gears

Drawing Frames
- Calender rolls
- Compound gears
- Drive shaft

Roving Frames
- Saddlles
- Bolsters
- Hook-bolster steps
- Chain drive
- Steel-roll stand inserts
- Shaft seats

Looms
- Rocker shafts
- Sand rolls
- Battery disk
- Dobby jack-levers
- Whip rolls
- Harness sheaves
- Treadle rolls
- Let-off gear stands
- Auxiliary shafts
- Take-up change gear

Cards
- Feed rolls
- Lap-roll gear studs
- Flat & disk pulleys
- Flat sprocket shafts
- Lickerin bearing
- Cylinder bearing
- Doffer bearing
- Coiler bearings
- Flat-drive worm studs
- Turn-table drive gears
- Cross-shaft coiler drive
- Switch gears
- Comb bearings

Spinning Frames
- Tape-idler blocks
- Twist-gear stud
- Cap-bar nebs
- Bolsters
- Lay-gear drive shaft
- Builder-cam shaft
- Front top-roll tips

Slasher
- Upright-shaft bearings

Finishing Equipment
- Brown doublers
- Dry cans
- Plaiters
- Padder squeeze-roll
- Washer nip-rolls
- Finisher pad-rolls

Cloth Room
- Brusher bearings
- Inspection frames

Table I. A list of mill uses for oilless materials in the form of bearings, bushings, gears, or studs.

QUALITY RICHMOND PRODUCTS

Less Handling with

AFTER CHLOR

eliminates
3 to 5 handlings

Bleach with HYPOCHLORITE Rinse and Use

AFTER-CHLOR *That's All!*

Write for FREE Sample—enough for a Trial Run

Our Technical Department Is at your Service

RICHMOND OIL, SOAP & CHEMICAL CO., Inc.
1041-43 FRANKFORD AVE.
PHILADELPHIA 25, PA.

LAZENBY

WINDERS
- **COP**
- **BUTT**
- **BOBBIN**

KEEP your machines at top production with Maintenance and Repair Parts from our stock.

And because Genuine Lazenby Parts are manufactured according to specifications and design drawings, correct fit and satisfactory operation are assured.

F. A. LAZENBY & CO.
31 E. Lee St. Baltimore, Md.

Laurel RAYON OILS

prevent abrasion
improve twist-set
and stitch — leave
yarns soft, workable

Laurel Rayon Oils give your yarns a protective film which prevents abrasion and breakage in processing; increases resiliency; improves twist-setting; effects clearer stitch. Laurel Rayon Oils quickly penetrate fibers, are quickly removed in regular scour. Do not oxidize nor become rancid. Keep yarns soft, pliable. Speed up your production.

Developed, tested by Laurel Laboratory—now in its thirty-seventh year—to meet exacting rayon requirements, Laurel Rayon Oils are processing favorites of leading mills. Why not take advantage of this Laurel experience in textile finishing and save processing time and money? Send today for trial order . . . available for immediate delivery.

Laurel Rayon Size • *Laurel Ruxite* • *Laurel Hydrosol*
Laurel Boil-Off Oils • *Laurel Textile Oils*

• SOAP • OILS • FINISHES •
LAUREL SOAP MANUFACTURING CO., Inc.
Wm. H. Bertolet's Sons • *Established 1909*
WAREHOUSES—PATERSON, N. J. • CHATTANOOGA, TENN. • CHARLOTTE, N. C.

OFFICES — 2608 East Tioga Street, Philadelphia 34, Pa.

PUT THIS INDUSTRIAL GIANT TO WORK FOR *you!*

CARBOMATIC INFRA-RED
GAS OR ELECTRIC UNITS

Amazing economies are typical of CARBOMATIC Infra-Red installations now in use in many textile plants. We suggest that you investigate the possibilities of this modern industrial giant.

Our engineering department will be glad to show you how CARBOMATIC Infra-Red can revolutionize your heating methods.

"Write for comprehensive broadside TW9"

- DRYING
- BAKING
- PRE-HEATING
- SINGEING
- ANNEALING
- CURING
- ROASTING
- CARBONIZING

If it's Infra-Red . . .
Be Sure it's CARBOMATIC!

INFRA-RED DIVISION

CARBOMATIC CORPORATION
117 WEST 63rd STREET • NEW YORK 19, N. Y.

Also—H. W. Butterworth & Sons Co., Philadelphia, Pa.
In Canada—Canadian Textile Engrg. Ltd.
980 St. Antoine Street, Montreal, P. Q.

Order now your Postwar

YARN THROWING MACHINES

Only the most modern yarn Throwing Equipment will be able to compete in the postwar textile era. Many have already ordered our postwar Yarn Throwing Machines. Act now. Our engineering department is at your service.

Consider These Products.

U. S. ACME TWISTERS for spool or headless package.

U. S. JUMBO FACE DRIVE TWISTERS for large Headless Package work.

U. S. ACME DOUBLE-TWISTERS—large Package.

U. S. REDRAWS and Spoolers.

U. S. TEXTILE MACHINE CO.

SCRANTON 9, PENNSYLVANIA, U. S. A.

PROTECT your MATERIALS

against DRY AIR with

Unit Type

SKILBECK HUMIDIFIERS

For Steam Heating Systems Carrying 1 to 20 lbs. Pressure

- **Low in Cost.**
- **Automatic in Operation.**
- **Dependable.**
- **Available Singly or in Clusters, to handle any size area.**

Cluster Type)

IDEAL FOR Textile Manufacturers

Protects health of Employees too!

TECHTMANN INDUSTRIES, INC.
828 N. Broadway—Milwaukee 2, Wis.
Please rush details on humidifiers to

Att'n of .....
Firm .....
Address .....
City .....State.....

known as sintering is then done. At the sintering furnace, heat is maintained at a temperature which will melt the binder metal and leave the other metals in particle form. After this treatment, the bearing or part has taken its final form—that of a die-compacted, sintered, powdered metal. It is then impregnated with oil.

BEARING USES. There are many installations of bushings, bearings, and parts made from powdered bronze, sintered iron, graphited bronze, wood, compressed fiber, and other oil-retaining materials. They are used from the opening room to finishing as shown in Table I.

Some mill men favor a complete installation of oilless bearing materials and bushings on all card shafts and studs. One well-known maintenance engineer has about 40 installations of oilless bushings and studs on each of several hundred cards. These installations were made while the cards were being overhauled and reworked. Close-tolerance bearings and bushings were used throughout, and it is said that after they were installed it was possible to set the reworked cards as closely as new ones. Previously it had been found that close settings resulted in "facing" the clothing.

Other card-room overseers point out that there are definite uses for the oilless bearing on the card, such as the doffer-comb bearing, feed rolls, and other parts where oil is difficult to place or retain; but that for general application on the card, they prefer not to use a close-tolerance bearing. They are of the opinion that careful study should be given the required porosity and strength of bearings for fans, beaters and card cylinders. In one mill, a test card fully equipped with oilless bearings was operated one month with no oiling.

In some mills, top rolls on drawing, roving, spinning, and combing frames are bushed with oil-impregnated, powdered-metal bronze. Calender rolls are similarly bushed. The features of oilless installations on spinning frames are the bar-stock inserts used in jack-gear studs and other items listed in the table. Installations are applicable to numerous positions on looms.

Finishing and cloth-room equipment is liberally supplied with wooden and metal oilless bearings. In this equipment, as has already been stated, bearings frequently are not oiled at all, because of the danger of contact with cloth. Other general-purpose uses related to textiles are in spacers for ball bearings, gears and bearings for bobbin-cleaning machinery, and bearings for conveyors and sewing machines.

FOR FULL EFFICIENCY

To develop the full efficiency of cards, equip them with BOOTH Card Clothing. There is a complete line; Cylinder Clothing, Doffers, Workers, Strippers, Angle Strippers, Tumblers, Fancies, Rings, Lickerins, Feed Rolls, etc.

BOOTH QUALITY Card Clothing

Has a firm foundation of fabric or leather, yet is flexible, which reduces the possibility of shelling out. All clothing is available with rehardened points if desired.

Benjamin Booth Co.

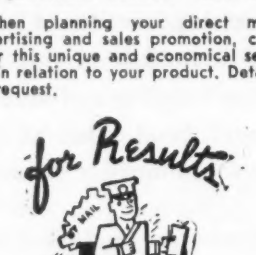
Allegheny Ave. & Janney St.
PHILADELPHIA 34, PA.

Solves the Problem of Mailing List Maintenance

Probably no other organization is as well equipped as McGraw-Hill to solve the complicated problem of list maintenance during this period of unparalleled change in industrial personnel.

McGraw-Hill Mailing Lists cover most major industries. They are compiled from exclusive sources, and are based on hundreds of thousands of mail questionnaires and the reports of a nation-wide field staff. All names are guaranteed accurate within 2%.

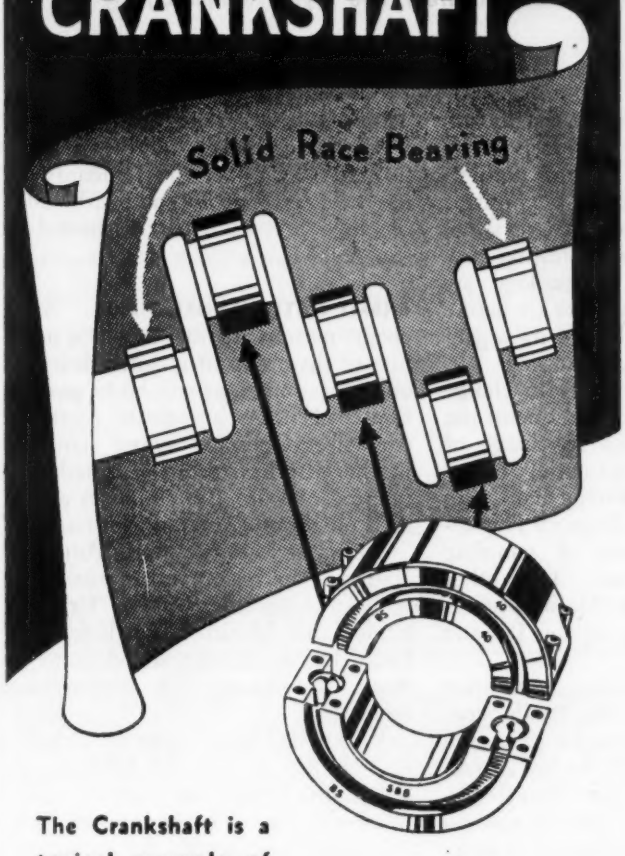
When planning your direct mail advertising and sales promotion, consider this unique and economical service in relation to your product. Details on request.



McGraw-Hill Publishing Co., Inc.
DIRECT MAIL DIVISION
330 West 42nd St., New York, 18, N. Y.

TYPICAL APPLICATION OF SPLIT BALLBEARING

The CRANKSHAFT



The Crankshaft is a typical example of assemblies where anti-friction bearings of the solid race-type are restricted, in that they can only be applied to the end main bearing locations. This alone would contribute nothing to the life of the mechanism. But the Split Ballbearing, with its divisible races can be easily installed in all other locations (i. e. crank pins and intermediate main bearings), thus affording maximum efficiency of performance; and incidentally creating an entirely new field of practical usefulness for solid race-type bearings, as shown. Gear clusters, accessory drive shafts, etc. can be made integral units instead of keyed or coupled assemblies.

SPLIT BALLBEARING

Send for catalog TW-95.

·DIVISIBLE RACE BEARINGS·

SPLIT BALLBEARING CORPORATION

LEBANON, NEW HAMPSHIRE. U. S. A.

Symbol of Quality

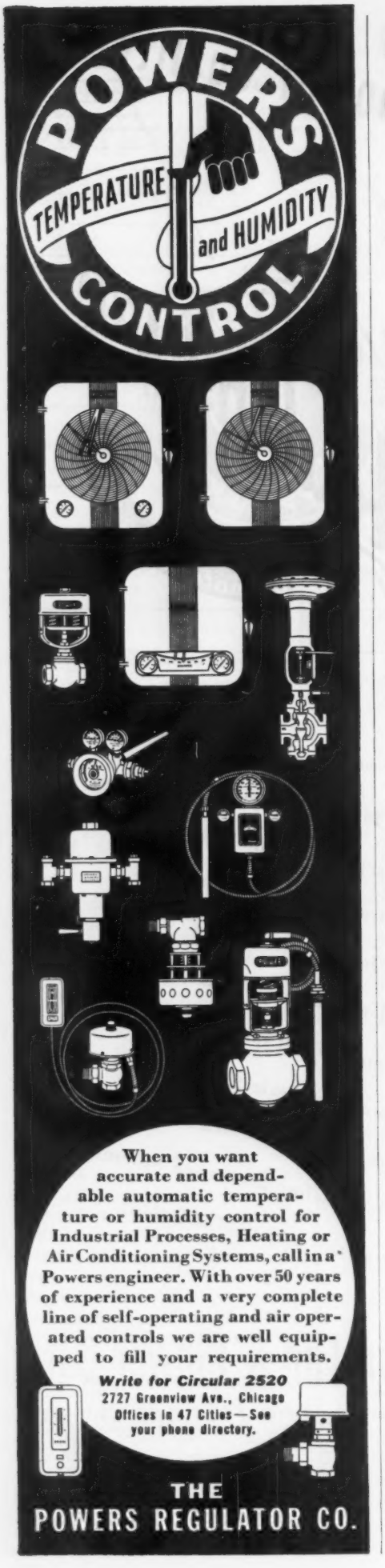
JOHNSON Health-aire PRODUCTS

Climate as you like it

NOT mere words . . . but a trade mark backed by 25 years of constant research, experiment and improvement. This cumulative "know-how" is inserted into all Johnson Health-aire Propeller Fans and Blowers, assuring customers of full value and guaranteeing perfection in workmanship. Look for the name Health-aire when you buy ventilating equipment, it is truly a Symbol of Quality.

Johnson Fan & Blower Corp.

1321 West Lake Street *Chicago* 7, Illinois


POWERS
TEMPERATURE and HUMIDITY
CONTROL
When you want accurate and dependable automatic temperature or humidity control for Industrial Processes, Heating or Air Conditioning Systems, call in a Powers engineer. With over 50 years of experience and a very complete line of self-operating and air operated controls we are well equipped to fill your requirements.
Write for Circular 2520
2727 Greenview Ave., Chicago
Offices in 47 Cities—See your phone directory.
THE
POWERS REGULATOR CO.

International STANDARDS Considered for Textiles

HIGHLIGHTS: *United Nations Standards Coordinating Committee looks to textile testing, wool moisture content, and rayon terminology.*

TEXTILE STANDARDS undoubtedly will be discussed at the Oct. 8 organization meeting of the United Nations Standards Coordinating Committee when it convenes in New York. Wool moisture content, textile testing procedure, and rayon terminology are three textile items that were set before the committee even before its organization was complete.

H. J. Wollner, secretary in charge of the New York office and one of the two original secretaries in charge of the international coordinating organization, is a former textile man who set up for the U. S. Treasury Department official methods of sampling and testing raw wool. The other member is Charles LeMaistre, secretary who is in charge of the London office.

The present correlating committee has been operating on funds contributed by its members, $10,000 each being supplied annually by the American Standards Association, the British Standards Institution, the Association Francaise de Normalisation, and lesser amounts by other members. Representatives are definitely expected from China, France, Australia, Brazil, Canada, England and the United States. In addition, New Zealand, Russia, South Africa and the Netherlands, as well as Mexico, may also attend.

The United Nations Standards Coordinating Executive Committee is composed of Dr. P. G. Agnew of the ASA, James Morrow of the Canadian Standards Association, and Percy Good of the British Standards Institution.

Secretary of Commerce Henry Wallace recently sponsored a committee of 50 American industrialists to recommend how standards would be set up within the United States; and this committee, of which C. E. Wilson was chairman, recently submitted a report recommending that the ASA be the overall body and that the Bureau of Standards and other governmental agencies work through it. At present the about 80 organizations, including five U. S. departments and three other federal agencies, are working through the ASA. One member is the American Society for Testing Materials, which is of great importance in the textile industry because of its Committee D-13 on textile standards. It has been estimated that nearly 30% of the ASA standards originated in the ASTM.

ENEMY NATIONS INELIGIBLE. Since enemy nations are not eligible as members of the group, it is quite clear that one of its functions will be to give the United Nations a definite economic edge over Germany whose standards in the past have been accepted in a number of European countries and at least one South American nation.

So far, at least five South American countries have set up standardizing bodies: Argentina, Brazil, Uruguay, Chile, and Mexico. Of these, only Brazil has so far signified definite interest in joining the international body.

When the body meets in October, the matter of the old International Standards Association, now in a state of suspension, will unquestionably be discussed and possibly its name may replace that of the United Nations Standards Coordinating Committee. This latter name is somewhat confusing since the committee is not at present officially identified with the United Nations organization as set up at San Francisco.

It is expected that international standards will be offered much on the same basis that the ASA offers standards in this country; they can be followed or not by member bodies as they choose. It is entirely possible, however, that on some standards legislative action by various countries will be undertaken although none are in the offing for textile standards. The international association, similar to the ASA, will not originate any standards but will be governed by suggestions from member bodies. For example, the Australian association has already proposed that a standard be recognized for the moisture content of wool.

It seems fitting that textiles, as one of the oldest and one of the basic materials, should be receiving such important initial consideration in international standards.

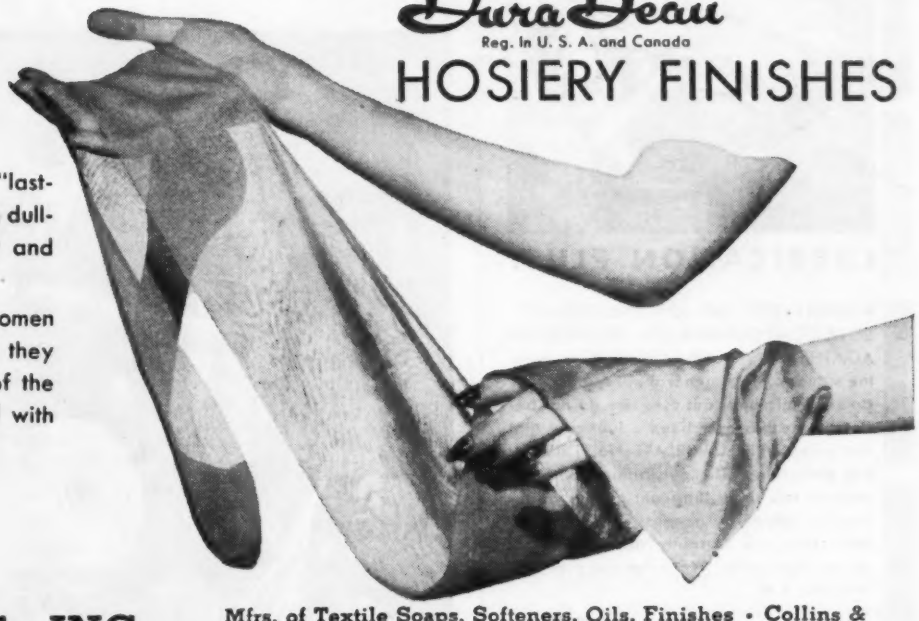
they are saying

EYE APPEAL *plus* LONG SERVICE LIFE

DuraBeau

Reg. In U. S. A. and Canada

HOSIERY FINISHES



As the name implies, *DuraBeau* means "lasting beauty,"—misty sheerness, exquisite dullness and delicacy; crystal clear color and freshness—plus miles more wear.

These are the things that discerning women have been saying for years, because they instinctively know that a great many of the leading brands of hosiery *are finished* with DuraBeau.

SCHOLLER BROS., INC.

Mfrs. of Textile Soaps, Softeners, Oils, Finishes • Collins & Westmoreland Sts., Phila. 34, Pa. • St. Catharines, Ont., Can.

STENCILED SHIPMENTS INSURE FAST HANDLING

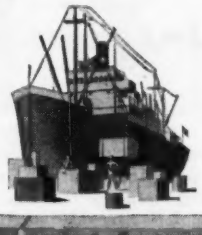
STENCIL MARK YOUR SHIPMENTS

CLEAR, EASILY READ, PERMANENT STENCILED ADDRESSED SHIPMENTS move through the Shipping Room faster and are speeded all along in transit.

THESE NEW DIAGRAPH-BRADLEY FOUNTAIN STENCIL BRUSHES . . . each represent major advancements in stencil brush design and efficiency . . . featuring: STURDY ALUMINUM CONSTRUCTION • LIGHT WEIGHT • LARGE FENDER GUARD to prevent ink on bristles getting on table, clothing, etc. • LARGE INK CAPACITY • ALWAYS READY FOR USE. THE PENACTION FEED* operates like a fountain pen • THE SIDE BUTTON STREAMLINER* is controlled by a diaphragm valve • CAN'T LEAK.

*Pat. App. For

Railroads and Truckers now recommend STENCILING. See: Revised Marking Rule No. 6 revised to include the following "Each package must be stenciled or otherwise plainly marked."



FOR SPEEDING SHIPMENTS USE

- D-B INKS
- D-B STENCIL BOARDS
- D-B FOUNTAIN STENCIL BRUSHES
- D-B FOUNTAIN MARKING PENCILS
- D-B STENCIL CUTTING MACHINES

COMPLETE SHIPPING ROOM SUPPLIES

D.B. DIAGRAPH-BRADLEY

STENCIL·MACHINES

NO. 60 DIAGRAPH-BRADLEY BUILDING
ST. LOUIS 8, MISSOURI
Distributors in Principal Cities

See Your Telephone Directory—Classified Section Under STENCIL CUTTING MACHINES

WORLD'S OLDEST AND LARGEST MANUFACTURERS OF STENCIL CUTTING MACHINES

LUBRIPLATE No. 130-A

LUBRICATION PLUS!

A SUPER LUBRICANT—A MARVELOUS ANTI-SEIZE COMPOUND—A REAL PROTECTION AGAINST RUST AND CORROSION. From the standpoints of general utility and wide diversity of important uses, we do not believe there has ever been a lubricant that compares with LUBRIPLATE No. 130-A. It has everything. The outstanding performance of this super-lubricant and its adoption by industry in general, and the Army and Navy are certainly adequate proof of its superiority. Write for copy of bulletin No. 6-41.

LUBRIPLATE

Lubricants definitely reduce friction and wear to a minimum. They lower power costs and prolong the life of equipment to an infinitely greater degree. LUBRIPLATE arrests progressive wear.

LUBRIPLATE

Lubricants protect machine parts against the destructive action of rust and corrosion. This feature alone puts LUBRIPLATE far out in front of conventional lubricants.

LUBRIPLATE

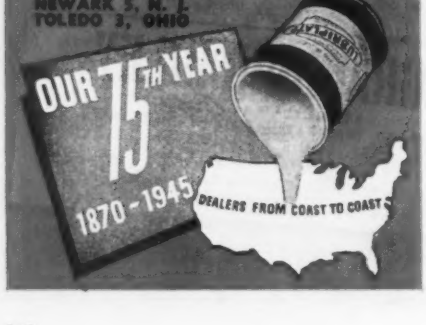
Lubricants are extremely economical for reason that they possess very long life and "stay-put" properties. A little LUBRIPLATE goes a long way.

Write for a booklet, "The LUBRIPLATE Film" written especially for your industry.

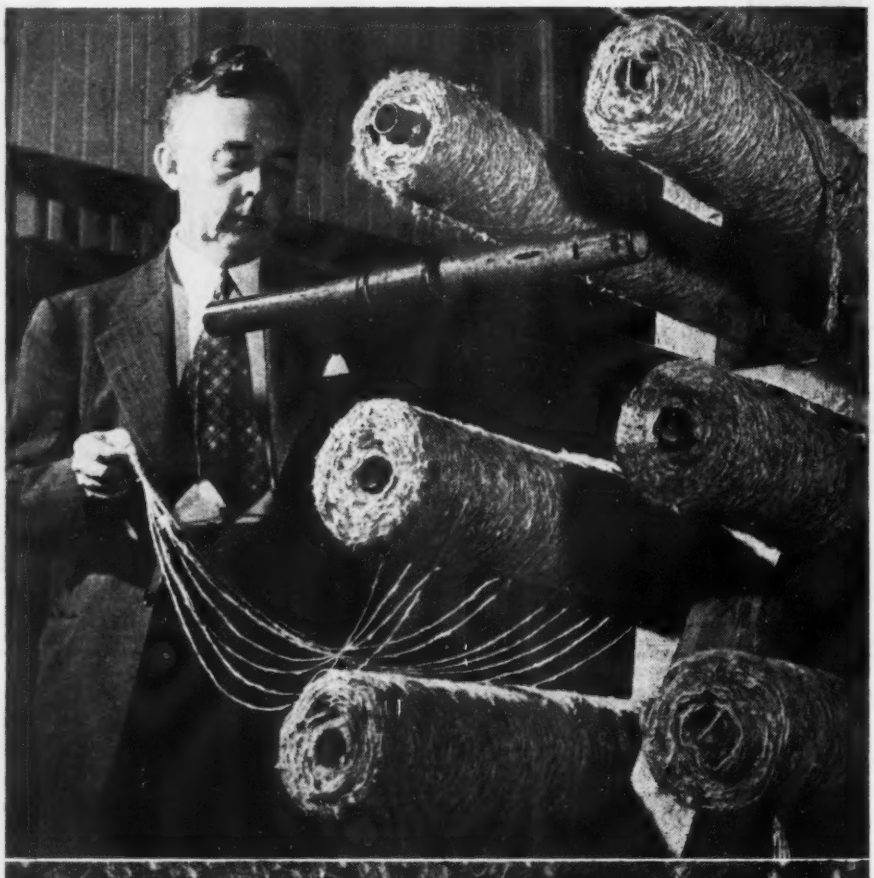
LUBRIPLATE

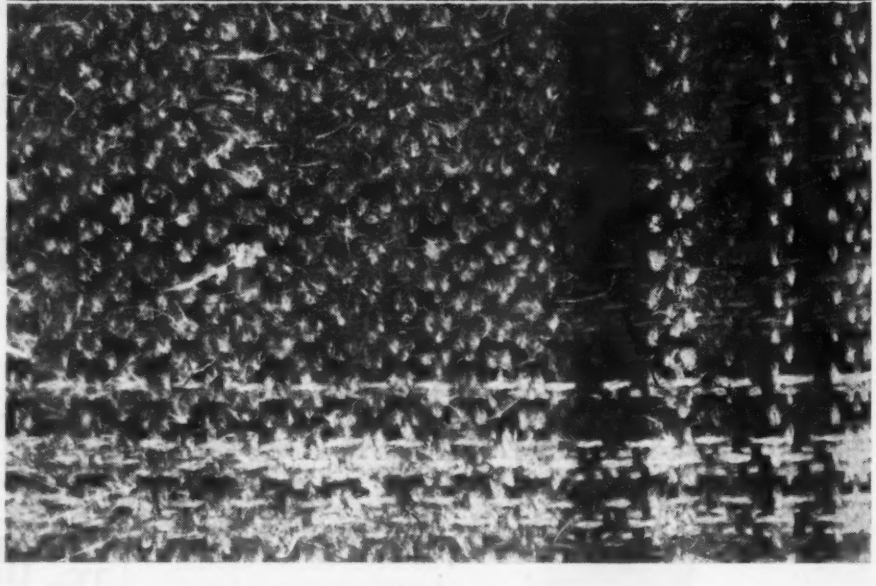
FISKE BROTHERS REFINING CO.

NEWARK 5, N. J.
TOLEDO 3, OHIO



Chicken-Feather Blends Are Made Into Fabrics





Yarns and fabrics are being made of blends of wool and chicken-feather fluff at the Hogansville, Ga., plant of the United States Rubber Co. Above, B. H. Foster, manager of the textile section of the company's general laboratories, inspects the woolen-system roving. The feather quills are removed by a machine, and the fluff up to 70% of the total can be blended with wool. Fabrics made of wool and feather blends are said to have the appearance of wool but are warmer, softer, and lighter than wool. They can be dyed and laundered. The October issue of The American Magazine *will carry a popularized story about this material and Dr. Willis A. Gibbons, research director of the U. S. Rubber Co.*

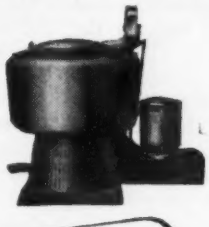
Faster and Better TEXTILE EXTRACTION *for Every Material*

TOLHURSTS have proven themselves time and again the fastest, most efficient extractors in the textile field. For every need, for every material, the right Tolhurst will do it better and faster.

TOLHURST "SUPREX"—For cotton raw stock this 48" extractor has proven its worth, in speed of extraction, economy and production. Smooth, efficient operation is assured by "SUPREX" suspension principle. Higher rotational speeds mean quicker and greater extraction. Timer control eliminates guessing when load is finished.

TOLHURST "CENTER-SLUNG" Every feature of the "CENTER-SLUNG" has been designed to produce greater volume in shorter time. Unexcelled for underwear, tubing, hosiery and other fabrics. The exclusive center-of-gravity basket suspension enables this machine to handle unbalanced loads and assures smooth operation. Available in 40", 48" 60", 72" basket sizes.

TOLHURST "SOLID CURB" Designed for rapid handling of small loads, the Tolhurst "SOLID CURB" Extractor is ideal for yarn, hosiery and other textiles. Motor drive. Basket sizes 20" and 30"



Write for detailed literature

ARMY-NAVY E

Tolhurst CENTRIFUGAL DIVISION

AMERICAN MACHINE AND METALS, INC.
EAST MOLINE, ILLINOIS

Finnell FAST-ACTING *Cleaning Powders*

Cut Operating Time of Your Scrubbing Machine

All *Finnell* Floor-Cleaning Powders are specially compounded to work in scrubbing machines. The chemical action of these powders is compatible with the speed of machine-scrubbing! They act instantaneously on dirt, oil, and grease, so that your scrubber can more quickly remove the accumulation from the floor. This cuts operating time of your machine and saves labor.

The six *Finnell* Powders illustrated serve specific needs. *Setol:* An oil emulsifier developed for quickly and safely removing grimy oil and grease from mill floors. *Asesco:* Also an oil emulsifier, but recommended under conditions not requiring the potency of *Setol*. *Finola:* A scouring powder for heavy duty scrubbing of smooth, hard surface floors —such as terrazzo, cement, tile, and marble floors— and of some wood floors. Greaseless . . . leaves no dirt-holding film. *Century Scouring Powder:* A mild abrasive cleanser. *Solar Soap Powder:* Vegetable oil base . . . assures thorough, rapid cleansing. Recommended wherever a good *soap* powder is required. *Finnell Rubber Cleaner:* Endorsed by Rubber Flooring Manufacturers Association.

Finnell Powders are compounded in *Finnell's own powder mill*, and are put up in containers ranging from 5-lb. bags to 300-lb. barrels. For literature or consultation, phone or write nearest *Finnell* branch or Finnell System, Inc., 1909 East St., Elkhart, Ind.

IF YOU NEED SCRUBBING EQUIPMENT . . . ask about the advantages of a *Job-Fitted Finnell.*

FINNELL SYSTEM, INC.
Pioneers and Specialists in
FLOOR-MAINTENANCE EQUIPMENT AND SUPPLIES

BRANCHES IN ALL PRINCIPAL CITIES

ACETATE
YARN-DYES
(Spun or Filament)
TREMENDOUSLY
FAST

★

Our patented process colors acetate yarn, in the wound form, unusually fast to sun, gas-fading, piece dyeing and finishing.

★

Atlantic Rayon
CORPORATION

Dyers and Converters of Synthetic Yarns for All Industries

Plant at Providence 1, R. I.

BRANCH OFFICES:
Empire State Bldg., 5th Ave.
New York 1

3701 North Broad St.
Philadelphia 40

★

Free FOR THE ASKING

MANUFACTURERS' BULLETINS

READERS interested in literature reviewed on this page may secure copies with time-saving coupon on page 264. Mark what you want on it and send it to Textile World, 330 West 42nd St., New York 18, N. Y. Be sure to give your name and company connections.

1. Weather protection for industrial roofs is discussed in the July issue of *Factory Mutual Record*, published by the Associated Factory Mutual Fire Insurance Co. Anchoring roofs for protection against tornadoes and using gravel and tar for protection against hail are discussed and illustrated.

2. Loom research and development is the subject of *Cotton Chats*, August issue, published by Draper Corp. A brief discussion of the scope of research and development in the loom field is outlined in this publication.

3. Adhesives in industry is the subject of a 12-page booklet published by the Minnesota Mining & Mfg. Co. The booklet illustrates and describes adhesive operations in several industries, including the textile applications.

4. "Pigments on Textiles" is the title of an article appearing in Issue No. 12 of *For Instance*, published by the American Cyanamid Co. The article is devoted to the art of decorating textiles with pigments.

5. Industrial chemicals are listed and described in Bulletin 100, entitled "General Products List," issued by Hooker Electrochemical Co. About 100 industrial chemicals are listed.

6. Industrial chemicals and specialties are the subjects of a pocket-size booklet issued by Pennsylvania Salt Mfg. Co. The booklet lists the industrial chemicals and specialties manufactured and sold by the company.

7. "Light from Floors" is the title of a 24-page book published by the Universal Atlas Cement Co. The book stresses the light-reflecting capacities of cement floors painted white.

8. "Your Guide to Rayon" is the title of a 44-page booklet published by Courtalds (Canada) Ltd. The booklet points out the limitations and possibilities of rayon.

9. Resin-coated voile is discussed in the July issue of *Bakelite Review*, published by the Bakelite Corp. The subject is discussed from the standpoint of the post-war possibilities.

10. Valuing machinery needed is discussed in the July issue of *Davis & Furber News*, published by Davis & Furber Machine Co. The folder contains a brief discussion of a new method of valuing machinery needed.

11. Locks for fluorescent lamps and fixtures are described in a circular entitled "Flur-O-Locks" issued by Laduby Co. The circular states that the lock prevents falling lamps and assures proper installation of lamps.

12. "Dyeing and Printing High-Tenacity Rayons" is the title of Booklet No. 4 of a series of pigment colors published by Aridye Corp. The booklet describes methods for applying resin-bonded pigment colors to high-tenacity rayon fabrics.

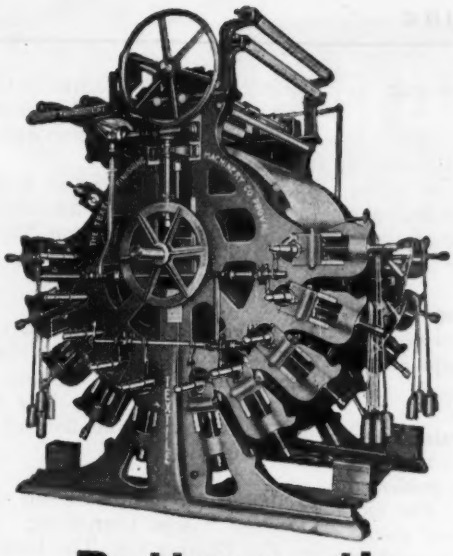
13. The importance of mental attitudes as compared with the importance of machines is discussed in the August issue of *The Howard Way*, published by Howard Bros. Mfg. Co. The dependence of worker productivity upon the mental attitude of the worker is stressed.

14. Fire-fighting foam made from soy beans is the subject of a short article appearing in *The Pioneer*, published by Niagara Alkali Co. The advantage of soybean over animal protein as the base of fire-fighting foam is discussed.

15. Testing and controlling electrical motors is the subject of four articles appearing in the *Electrical Review*, published by Allis-Chalmers Mfg. Co. Circuit breakers, short circuits, and speeds are discussed.

16. Flexible pipe couplings are discussed in a four-page illustrated folder issued by Drinkwater, Inc. The folder illustrates how Presto-Lock couplings join pipe ends without threads.

17. Resurfacing floors and other surfaces is discussed in a six-page folder issued by Tufcrete Co. The folder states that Tufcrete resurfacer is an asphalt-base liquid



Butterworth Printing Machines

Available from one to fourteen colors. Special individual motor drives. Heavy balanced printing cylinder. Extra heavy balanced printing cylinder. Extra heavy side frames. Precision-machined nips for accurate pattern registration.

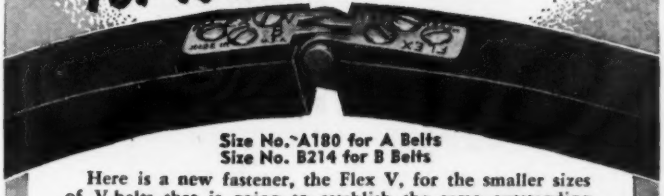
H. W. BUTTERWORTH & SONS CO.,
Serving the Textile Industry since 1820.
Main Office and Works, Philadelphia 25, Penna.

Butterworth

---

and now the **FLEX V** TRADE-MARK

A new Fastener for A and B V-belts



Size No. A180 for A Belts
Size No. B214 for B Belts

Here is a new fastener, the Flex V, for the smaller sizes of V-belts that is going to establish the same outstanding performance record as the Alligator V-belt fastener has already established for the larger sizes of V-belts.

This new Flex V fastener is made in two sizes for A and B section V-belts. It is simple in design, easy to apply and the separable hinge joint makes for quick replacement of V-belts without dismantling shafting or machinery. No metal touches the pulley so Flex V fastened belts can be run on a V-flat drive.

Folder No. V-12 gives complete details on this new Flex V fastener with list prices, special tools and application information. Your request will bring a copy.

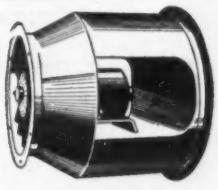
Order from your supply house

FLEXIBLE STEEL LACING CO.
4630 LEXINGTON ST., CHICAGO 44, ILLINOIS

Also sole manufacturers of Alligator Steel Belt Lacing for flat transmission belts. Alligator V-belt Fasteners for V-belts and Flexco HD Belt Fasteners and Rip Plates for fastening and repairing conveyor belts.

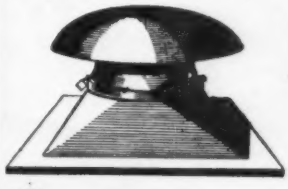
---

4 ANSWERS TO VENTILATING PROBLEMS



1 HEAT AND VAPOR EXHAUST SYSTEMS

DeBothezat Bifurcators *install right in the duct.* For handling corrosive or high temperature fumes and gases. Motor isolated from fumes in chamber open at both ends. Sizes 18 in. to 4 ft.

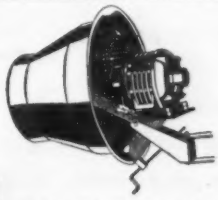


2 ROOF VENTILATORS

Assure positive ventilation *regardless* of temperature, humidity and wind velocity. Hinged top gives easy access to motor, fan and shutter. Light-proof; ready for blackout. Sizes: 21", 27", 36".

3 GENERAL EXHAUST SYSTEMS

DeBothezat offers a complete series of volume and pressure, axial-flow fans. Non-overloading power characteristic. Guaranteed performance ratings based on wind tunnel tests. Direct drives. Sizes from 18 in. through 10 ft.



4 FOR BLOWING LINT

"HY-V" Air Jet combines high-efficiency, axial-flow fan with conversion nozzle for blowing a column of air. Arranged for column or floor mounting. "Air Jet" can be pointed in any direction.

Literature on all DeBothezat Ventilating Equipment is available on request.

De Bothezat

FANS DIVISION
American Machine and Metals, Inc.
East Moline, Illinois

Optonics

The FUNCTIONAL USE OF COLOR Speeds Plant Production

SEND FOR THIS Booklet

By bolstering employee morale, improving industrial safety and reducing absenteeism, the Optonic Color System increases plant efficiency and production. This newly developed FUNCTIONAL use of color is described in a booklet, "Color Power for Industry". A note on your business letterhead will bring you a copy with our compliments.

THE ARCO COMPANY
CLEVELAND, OHIO • LOS ANGELES, CALIF.

ARCO
Paints for Industry

FREE FOR THE ASKING

which is added to a concrete mixture for resurfacing.

18. Feed water regulators is the subject of Bulletin No. 83-C issued by Bailey Meter Co. It describes thermo-hydraulic generators and bellows-operated regulator valves.

19. Proper care of wick rings for improving worsted spinning is discussed in the July issue of *The Traveler*, published by Victor Ring Traveler Co.

20. Spectrophotometric analysis is discussed in an article appearing in the July-August issue of *Instrumentation*, published by the Brown Instrument Co. The fact that various chemical substances absorb light at certain wave lengths is used in these analyses.

21. Magnifying and lighting a focal subject is discussed in a four-page folder issued by George Scheer Co., Inc. Several applications of the Magni-Ray lamp are illustrated.

22. Oxygen as the servant of industry is discussed in a 24-page, two-color booklet issued by the Air Reduction Sales Co. Oxygen for various flame processes is discussed.

23. "Incentive Wages" is the title of an eight-page folder issued by Albert Ramond and Associates, Inc. The advantages of incentive wages are pointed out.

24. "Evaporative Coolers" are discussed in Bulletin C-1100-B27 issued by Worthington Pump & Machinery Corp. Pictures, tables, and sketches illustrate the installation and uses of evaporative coolers.

25. Materials handling is illustrated in the July issue of *The Swirling Column*, published by the American Monorail Co. Several textile applications of MonoRail carriers are illustrated.

26. Valve and ball floats for water lines are discussed in *INCO*, published by the International Nickel Co., Inc. Illustrations and sketches show how the valves and floats control the flow of water in numerous installations.

27. Industrial pumps are the subject of "Deming Pumps Everywhere," published by The Deming Co. The booklet points out the wide application of industrial pumps and gives a brief picture of the early manufacture of pumps.

28. Oil in industry is the theme of the August issue of *Esso Oilways*, published by Standard Oil Co. The 22-page booklet is well illustrated and touches upon a number of industries.

29. Ball and roller bearings are described and illustrated in a four-page folder issued by the Ball and Roller Bearing Information Center. Some of the processes and techniques used in manufacturing these bearings are shown.

30. Exterior painting of concrete is discussed in the July issue of *Building Maintenance*, published by Truscon Laboratories, Inc. Valuable pointers on painting concrete are given.

PASTE IT ON A POSTCARD

This mailing coupon is a convenient size to paste on a penny postcard. ***Circle the numbers of the catalogs you want*** *which correspond to the number on the descriptive paragraphs. Fill out the coupon* ***legibly*** *and* ***completely.*** *Paste it on a postcard, or put it in an envelope if you prefer, and mail it to Textile World, 330 W. 42nd St., New York 18, N. Y.*

MAILING COUPON

TEXTILE WORLD,
330 West 42nd St., New York 18, N. Y.

I have circled below the catalogs I want, as listed in your September, 1945, "Free for the Asking."

1	2	3	4	5	6	7	8	9	10	11
12	13	14	15	16	17	18	19	20	21	22
23	24	25	26	27	28	29	30			

My Name..... Title.....
(PLEASE PRINT)

Company .....

Street ..... City & State.....

Fairbanks-Morse Scales

Help Speed Production, Guard Accuracy

In textile production Fairbanks-Morse Scales help check and record quantity as work moves from department to department. And, where volume plays a part in payrolls, accurate printed records from Fairbanks-Morse Scales forestall disputes, assure accuracy. In weigh counting, in checking incoming and outgoing shipments, and in many other mill operations you'll find Fairbanks-Morse Scales serving with outstanding satisfaction. They're fast, they're adaptable, and as production tools help eliminate chances for human error.

Why not get details on how Fairbanks-Morse Scales can help you solve production problems. Write Fairbanks, Morse & Co., Fairbanks-Morse Building, Chicago 5, Illinois.

Illustrated left is a Fairbanks-Morse Platform Warehouse Scale with direct-reading cabinet dial. Also available with Printomatic attachment.

Fairbanks-Morse

A name worth remembering

Diesel Locomotives • Diesel Engines • Generators
Motors • Pumps • Scales • Magnetos • Stokers
Railroad Motor Cars and Standpipes • Farm Equipment

BUY VICTORY BONDS

INSTALL
UNIT HEATERS THAT WILL NOT PLUG UP WITH LINT...DUST ETC.

GRID UNIT HEATERS *here's why*

HIGH TEST CAST IRON HEATING SECTIONS

* One piece construction heating sections (patented) of high test cast iron that withstand steam pressures up to 250 lbs.
* No soldered, brazed, welded or expanded connections to become loose or develop leaks.
* No electrolysis to cause corrosion, breakdowns, leaks, or heating failures.

GRID High Test Cast Iron Unit Heaters are engineered especially to overcome atmospheric conditions always present in textile mills. Many have been in use for 15 years without maintenance expense. Capacity tables and complete details upon request.

SEND! for new booklet that tells why corrosion destroys unit heaters—free upon request.

D. J. MURRAY MANUFACTURING CO. WAUSAU, WISCONSIN

Style 20

LANE

The IDEAL BASKET for

LOOPERS

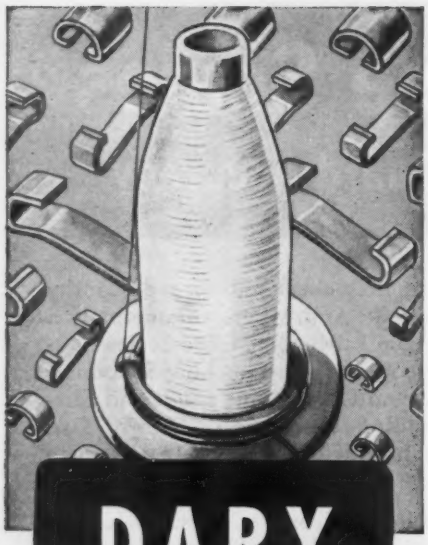
SEAMERS

RIBBERS

GENERAL

W. T. LANE & BROS., Inc.

***Manufacturers* : POUGHKEEPSIE, N. Y.**



DARY

RING TRAVELERS

What Makes A Leader?

In the case of Dary Ring Travelers, it's built-in craftsmanship . . . craftsmanship that assures uniformity of every traveler produced plus extra wear-ability.

This manufacturing craftsmanship is not a new Dary innovation; in fact, Dary Travelers have been made under the same rigid process for more than 45 years. Throughout this period, Dary Ring Travelers have been continuously improved, using the same basic method of manufacture.

For consistent superiority that means better, less expensive spinning and twisting, try Dary Ring Travelers.

DARY

★ PROCESSED ★

SYMBOL OF SUPERIORITY

The DARY RING TRAVELER CO.

TAUNTON, MASSACHUSETTS

JOHN E. HUMPHRIES, BOX 843, GREENVILLE, S. C.

JOHN H. O'NEIL, BOX 720, ATLANTA, GA.

H. REID LOCKMAN, BOX 515, SPARTANBURG, S. C.

News of the month

Cottons Await Higher Ceilings. Despite the cancellation of WPB mandatory set-asides of cotton goods under M-317A, except for four types, the market for cottons was generally limited. Sellers showed little disposition to commit their production for future delivery despite the large number of buyers who would like to place substantial orders. The four fabrics still covered by set-asides are osnaburgs, cotton flannels, and Class A and Class B sheetings. However the rated-order provisions of M-317A are still in effect. Mills are waiting for further increases in price ceilings to spread through the market following OPA's increases made Sept. 4 on chambrays, coverts, whipcords, cottonades, and bed linens. The open price basis allowing increases up to 5% maximum was no longer attractive to most sellers because the increases allowed on the five classes of goods just mentioned ranged into higher percentages. Cotton yarns were fairly active in early September because definite new price ceilings had been set under SO-131.

Some Rayon "MAP" Relief. The OPA gave a portion of the rayon-textile industry a 30-day relief period from the Maximum Average Price order beginning on Sept. 4. The action was based on the "serious emergency" provision of MAP. During the specified period, which theoretically covers reconversion from military to civilian production, delivery of fabrics from reconverted looms may be excluded from the MAP pricing provisions. OPA estimates that exempted production will be less than 12% of the total mill output, and states that the product involved will still be controlled by applicable ceiling prices. If the emergency still exists at the end of 30 days, the exemption may be extended for another 30-day period.

NACM to Meet. The annual meeting of the NACM will be held at the Copley Plaza Hotel, Boston, Mass., Oct. 3. It will be similar to last year's abbreviated meeting, consisting of a short business meeting followed by luncheon with featured speakers.

Nylon Prices. The new price list for nylon yarn as established by E. I. du Pont de Nemours & Co., follows:

30 den./10 fil. type 200	2.75
40 den./13 fil. type 200	2.25
70 den./23 fil. type 200	1.75
70 den./34 fil. type 300	1.90
105 den./34 fil. type 300	1.80
210 den./68 fil. type 300	1.75
210 den./34 fil. type 300	1.60

AATT to Publish its Papers. A new technological journal, to be called "Papers of the American Association of Textile Technologists," is scheduled for publication late in December of this year, according to a statement at the Sept. 5 meeting in New York of the AATT by Ralph Gutekunst, of Hellwig Dyeing Corp., treasurer of the association and chairman of its publications committee. Contents will consist exclusively of technical or scientific papers read before the monthly meetings of the AATT, or prepared especially for it.

National Federation Elects. The National Federation of Textiles held its

Machinery Shows to Be Revived Next Spring

After a lapse through the war years, the two major textile machinery shows will be held next spring.

The Southern Textile Exposition will be staged in Textile Hall, Greenville, S. C., beginning on Apr. 8, 1946; approval of ODT has been obtained. Applications now on hand are sufficient to occupy most of the available space. The show promises to bring to light many of the latest wartime and reconversion-period developments.

The Knitting Arts Exhibition, it is expected, will be held at the Atlantic City Auditorium late in April or early in May. The plans set up for the 1942 exhibition at this new location, which were canceled because of the war, will be reinstated and carried out.

A MODERN BEAM WARPER

DRIVEN DIRECT FROM BEAM HEAD

For All Synthetic Yarns and Fine Count Cottons

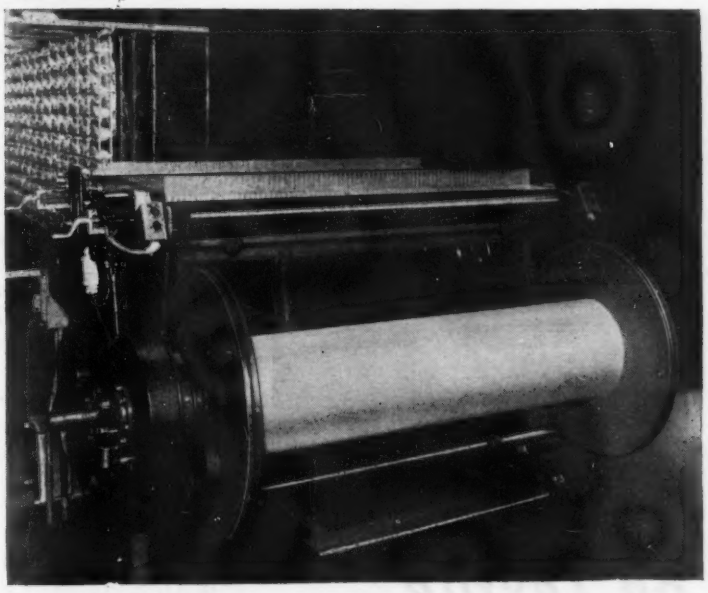
Here are a few salient features of this new warper. It drives directly from the beam head. Large presser roll is eliminated. There is consequently no distortion of the yarn and shiners are eliminated.

The fact, too, that the beam is driven directly from the beam head permits more efficient braking without strain on the yarn. Efficient braking mechanism.

Heavy construction. There is absolutely no backlash.

A multiple disc clutch is employed. An automatic movable reed is another special feature.

This new beam warper produces better warps. Write for full details.



SIPP-EASTWOOD CORPORATION

PATERSON, N. J.

ITS A TRADE MARK SIPP EASTWOOD

Manufacturers of high-speed warpers, overend cone creels, oilless bearing winders, redraw frames, quillers, re-beamers, edge warpers, tensometers, densimeters, and static eliminators.

NEW ENGLAND REPRESENTATIVES: J. S. FALLOW & CO., NEW BEDFORD, MASS.

ONE MINUTE TALKS ON

Preventing Slime and Scale in Humidifying Systems

In order to keep humidifying systems at their operational BEST, try introducing the new, specially designed preventive maintenance material, Oakite Airefiner No. 52, to the recirculating water supply of units. Oakite Airefiner No. 52 suspends and prevents formation of slime, lint, sizing, mold deposits at orifices or in drain and return lines. You'll find Oakite Airefiner No. 52 works unusually well in hard water . . . helps prevent lime-scale build-up and offers positive germicidal action to prevent development of bacterial organisms.

For full information, write us at your convenience. We'll be glad to send you any data you may wish.

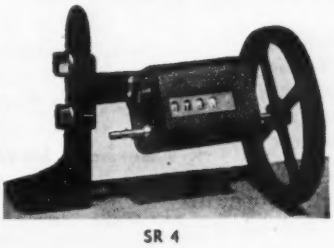
OAKITE PRODUCTS, INC.
42 Thames Street, New York 6, N. Y.

Technical Service Representatives Located In All Principal Cities of the United States and Canada

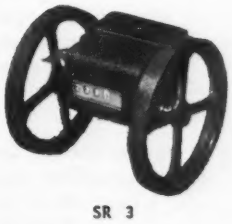
OAKITE *Specialized* **CLEANING**

MATERIALS & METHODS FOR EVERY CLEANING REQUIREMENT

New Type of MEASURING COUNTERS



SR 4



SR 3

SR 4 is a counter with a bracket on which the height of the counter can be regulated and is adjustable to all positions. EXTENDED SPINDLE provides for conversion into SR 3 as pictured. BOTH TYPES are of high grade precision with instantaneous reset lever action and heavy rubber covered wheels of ½ yard circumference. BASE of counters: 4¼ x 2½, height 1⅞ inches. Clock and counter clockwise revolution subtracts in opposite direction.

WE ALSO INVITE your inquiry for our "TRUMETER" measuring machine with flexible roller and brake arrangement and TICKET PRINTING COUNTER. The "TRUMETER" is a proven time and labor saving device. Bulletin sent on request.

"TRUMETER"

Trademark Reg. U.S.P.O.

TRUMETER COMPANY

1265 Broadway **New York 1, N. Y.**

Controlled Production

on Textile Machines

You always know what your machines are turning out when

PRODUCTIMETERS

are attached to them. No guesswork about it . . . the exact figures are registered right there on the counter . . . figures you can use for estimating production control . . . time study . . . costs . . . maintenance and servicing.

Illustrated above: Model 5-H-1-2 Stroke Counter attached to Folding Machine. As each fold contacts the "spoon" lever of the folder, it is registered on the Productimeter.

Complete line for application on various textile machines includes Rotary Counters, Lineal Measuring Units and Loom Pick Counters.

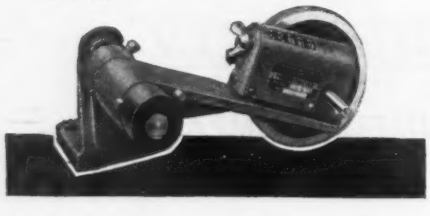
Send for Textile Counter Catalogs

Pick Counters, No. 5
Yardage Counters No. 6
Revolution Counters No. 8

DURANT MFG. COMPANY

1931 N. Buffum St. Milwaukee 1, Wis.
131 Orange St. Providence 3, R. I.

Model 5-D-9 Lineal Productimeter. Registers in yards, or yards and 1/8th yards. Also available for measuring in feet.



72nd annual meeting in New York shortly before the conclusion of the war and its scope was restricted in line with the government's regulation. William G. Lord of Galey & Lord, was reelected president and Irene Blunt, secretary and treasurer. W. Oakman Hay, Jr., vice-president of Wellington Sears Co., was elected vice-president of the federation to succeed Otis Stanton, of Hathaway Mfg. Co.

Combed Yarn Meeting. Southern Combed Yarn Spinners Association held its annual meeting at Gastonia, N. C., on Sept. 7. Speakers and subjects were as follows: Ward Delaney, president of the Institute of Textile Technology, Charlottesville, Va., on research; Lt. Col. James P. Kinard, Washington, D. C., on WPB; Fred Morrison, also of Washington, on taxes; Cyrus S. Ching, vice-president of U. S. Rubber Co., on industrial relations. Elmer F. Andrews, of New York, conducted a forum on industrial relations. At the luncheon, William J. Pharr, of Stowe Mills, McAdenville, N. C., retiring president of the association, spoke. Claudius C. Dawson, of Cramerton Mills, Inc., Cramerton, N. C., was elected president of the association. W. L. Robinson, of Parkdale Mills, Gastonia, N. C., was elected first vice president; A. C. Lineberger, Jr., of Rowan Cotton Mills Co., Salisbury, N. C., and of Piedmont Processing Co., Belmont, N. C., was elected second vice president. T. L. Wilson, of Ruby Cotton Mills, Inc., Gastonia, N. C. was reelected treasurer. Mrs. Mildred Barnwell Andrews, secretary for the last seven years, resigned as she is retiring from business activities.

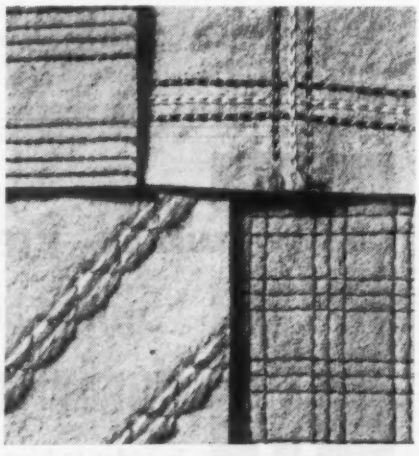
Germany Made a Nylon-like Fiber. A new fiber reported equal to nylon in most respects and superior in water absorption and dyeing characteristics has been produced in Germany, according to reports from returning technicians, the War Department states. It is termed a polyurethane fiber. In addition, special acid and chemical-resistant fibers were woven from polyvinyl chloride (chlorinated and unchlorinated) and also polyethylene.

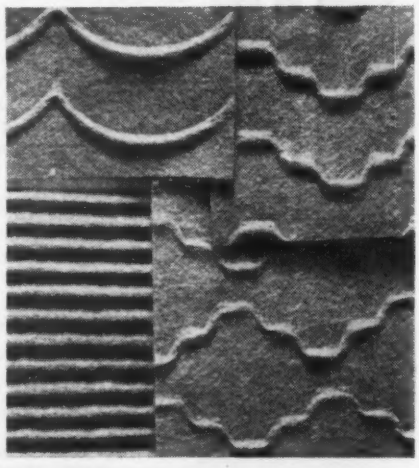
N. C. Simplifies Wage Reporting. A saving of more than 3,000,000 separate clerical operations annually is provided for North Carolina employers who formerly furnished wage data on individual wage slips to the Unemployment Compensation Commission. The new reporting plan involves filing merely of a carbon copy of the Federal Old Age & Survivors Insurance report on form furnished by the N. C. Unemployment Compensation Commission.

Hemp Plants Are Converted. Two southern Minnesota hemp plants have begun corn-drying operations as the first publicly owned war plants converted to a use directly benefiting agriculture, the Reconstruction Finance Corporation and War Food Administration jointly have announced.

Safety Film for Textile Mills. The National Safety Council has released a sound film titled "Woven with Safety" which contains safety-training material for use in textile plants. Photographs were taken in cotton, woolen, and rayon plants.

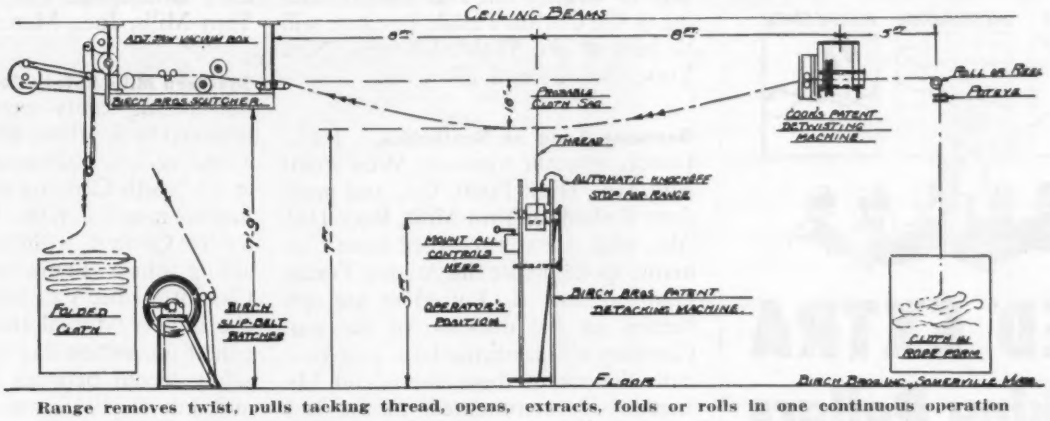
Navy Establishes Research Unit. The Navy Supply Corps has established a unit at the Navy Clothing Depot, Brooklyn, N. Y. to conduct all research and development of the Navy's clothing, textile fabrics, small stores, shoes, and containers. The division will be under supervision of Lt. J. L. Fawcett.



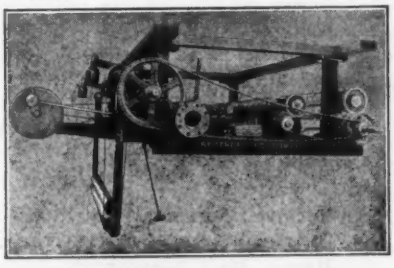


New stitched, and die-pressed patterns of wool felt in varied combinations, produced to stir the imagination and inspire those who wish to make use of wool felt in millinery, drapes, handbags, etc. The above designs are by Zucker & Josephy, New York.

AN OPENING RANGE FOR ALL FABRICS



Range removes twist, pulls tacking thread, opens, extracts, folds or rolls in one continuous operation



New Heavy Duty All Ball Bearing Cloth Opening and Folding Machine with Vacuum Extractor. All Drives by Cut Gears or Roller Chain. Drive by Built-in Motor, for opening and extracting woolens, worsteds, plushes, cottons and rayons.

BIRCH TREE.

BIRCH BROTHERS, Inc.

Harold W. Birch Clifford W. Birch Stanley W. Birch

Somerville, Mass.

Plant and office at Somerville

Southern Representative

JOHN C. COSBY, Greenville, S. C.

"FLASH-O-LENS"

The illuminated magnifier (5X to 100X)

For defect analysis textile research, process control, fiber identification and fabric inspection "Flash-O-Lens" provide a simple, efficient and economical mill service.

Available in several models, powered by A.C., D.C., or flashlight battery with various combinations of interchangeable lenses. Send for our illustrated catalog.

E. W. PIKE COMPANY

Elizabeth 3, New Jersey

• FOR COTTON • FOR NYLON • FOR RAYON • FOR WORSTED •

NEW BEDFORD, MASS. ALLEN COMPANY

THE *Right Beam* FOR *Any Yarn*

130-156 River Road, New Bedford, Mass.

So. Rep. L. E. Wooten, Fort Mill, So. Car.

For Maintained Shrinkage— Perfect Finish—Long Life

HUYCK SANFORIZER BLANKETS

HUYCK SANFORIZER and Palmer Blankets are daily meeting the most exacting requirements of finishers throughout the industry. From the lightest and finest fabric to the coarsest denim, there is a special Huyck blanket to meet your specific needs.

Huyck Sanforizer blankets retain high shrinkage and finish properties to the last.

PALMER BLANKETS—also available for your special requirements.

Write for information or see our representative

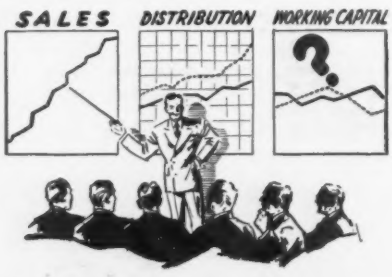
KENWOOD WOOL PRODUCTS

F. C. Huyck & Sons

KENWOOD MILLS

Albany, New York

YOUR INVENTORY IS YOUR COLLATERAL FOR BANK LOANS



NEED EXTRA
Working Dollars
to Meet Your Goal?

Will your present line of Bank Credit prove adequate in face of the unprecedented opportunity confronting you to share substantially in the volume distribution of obtainable goods or products to an eager and waiting consumer market?—Arrangements should be made now to augment your credit with FIELD WAREHOUSING.

YOUR INVENTORY whether of raw materials, semi-finished or finished goods remaining on the premises of YOUR BUSINESS ESTABLISHMENT can be conveniently and economically collateralized, by our FIELD WAREHOUSING SERVICE to enable you to obtain additional working capital, over and above your present line of credit from your Bank or Lending Agent.

HAVE YOU RECEIVED A COPY OF OUR FREE 22 PAGE BOOKLET?

Which illustrates how FIELD WAREHOUSING enables business to obtain maximum Bank Loans.

Write Nearest Office for your Copy . . . No Obligation . . . Strictly Confidential

Field Warehousing Division

ST. LOUIS TERMINAL WAREHOUSE CO.
SERVING INDUSTRY FOR TWENTY YEARS
GENERAL OFFICES—ST. LOUIS MO.
CINCINNATI • KANSAS CITY • CHICAGO • MEMPHIS

NEWS OF THE MONTH

CTI to Meet. The 19th annual meeting of the Cotton-Textile Institute will be held at the Waldorf-Astoria, New York, Oct. 24 and 25.

Germany Long on Synthetics. Joe L. Lanier, assistant treasurer, West Point Mfg. Co., West Point, Ga., and president Wehadkee Yarn Mills, Rock Hill, Ala., who recently returned from Germany, spoke before the Atlanta Textile Club on Aug. 6. Forced to use synthetics for the duration of the war, Germany will continue for a long time with the use of these fibers, said Mr. Lanier. He commented on the lack of integration in Europe, with very few mills doing both spinning and weaving. Mr. Lanier was acting as technical consultant to the Quartermaster General in the Eastern Theater of Operations.

Acid-Resistant Work Clothes. Special acid-resistant work shirts of Vinyon have been made by the American Viscose Corp. for use by employees whose work brings them in daily contact with acids. Reports to date on the Vinyon shirts indicate that they are giving exceptional service and show no harmful results from constant exposure to acids.

Quality Control Courses. Announcement has been made by Edward W. Ruggles, director of the College Extension Division, North Carolina State College, of a ten-day course in Industrial Statistics and Quality Control to be given at the college Oct. 10 to 16. Methods developed by the war agencies will be covered.

Textile School Deans Visit Research Unit. At the invitation of the American Viscose Corp. the deans of the country's leading textile schools and their representatives held a two-day conference on Aug. 7 and 8 at the company's Textile Research Department, Marcus Hook, Pa. The chief purpose of the conference was to acquaint the textile school representatives with the types of technical information that is available to them from the research department and laboratories.

Mills Win "E" Award. Army-Navy "E" awards were recently presented to the following firms: Springs Cotton Mills, Fort Mill, S. C., fourth award; Continental Mills, Inc., Philadelphia, Pa., fourth award; Reading Air Chutes, Inc., Reading, Pa.; William Skinner & Sons, Holyoke, Mass.; Quality Knitting Co., Stowe, Pa.; Hemphill Co., Pawtucket, R. I.; James Lees & Sons Co., Bridgeport, Pa.; and Limerick Yarn Mills, Inc., Manchester, N. H.

Southern Mills Safety Records. Several outstanding safety records have been achieved by Southern textile mills, with a total of 7,429,020 man-hours worked at 63 North Carolina mills during the first six months of the 1945 Statewide Safety Contest without a single disabling injury. Frank Ix & Sons, Inc., Charlottesville, Va., has been awarded the Liberty Mutual Insurance Co. accident prevention flag for an unbroken safety record between Nov. 1, 1944, and July 9, 1945; and Judson Mills, Greenville, S. C., has won the same award for completing 2,000,000 man-hours of production without a lost-time accident. The laboratory, supply, and finishing departments of Union Bleachery, Greenville, S. C., have been awarded certificates of merit for outstanding safety records.

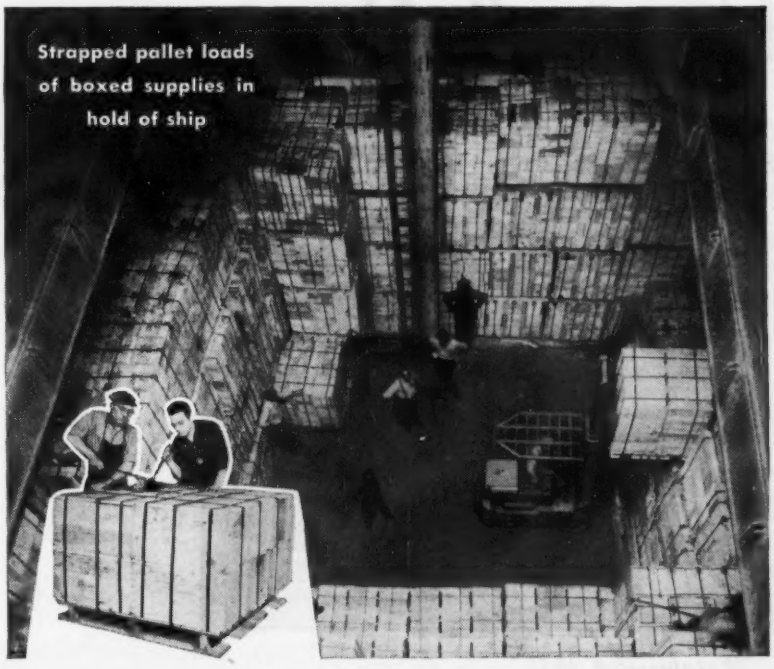
Receive Service Pins. One hundred forty-eight employees of the Newton Rayon Mill, Newton, N. C., Hosiery Finishing Mill, and Plant G, of Burlington Mills Corp., Greensboro, N. C., were recently awarded service pins for loyal and continuous service.

Employees Get War Bonds. Upon presentation of the Army-Navy "E" award to General Textile Mills, Inc., Carbondale, Pa., each employee was given a $25 War Bond as a token of the management's recognition of a job well done.

Party for Management. Employees of S. Stroock & Co., Newburgh, N. Y., reversed the usual procedure in a post V-J Day party given for "management morale," in recognition of management's trials in wartime. Special feature of the afternoon was a dummy newspaper headlining the end of wartime manufacturing curbs, with announcements of lowered taxes, and "textile situations wanted" advertisements.

Cotton Mill Sponsors Concert. Erwin Cotton Mills, Durham, N. C., have announced plans to sponsor a concert by the North Carolina Symphony Orchestra for the benefit of their employees and as a contribution to a statewide campaign being conducted to raise funds for the maintenance of the orchestra. The company has been sponsoring a musical education program since 1923 for employees, and members of their families, providing teachers, classrooms, pianos, and other equipment.

UNIT-LOAD STRAPPING FOR PALLETS AND SKIDS



Strapped pallet loads of boxed supplies in hold of ship

A pallet, like a skid, is a platform built to support a number of containers or products which, when strapped together, form a *unit load.*

Pallet loading conserves manpower by reducing the number of units handled—in packing, loading, warehousing, and unloading. Pallet loading conserves container and packaging materials; conserves space—in warehouses, freight cars and ships. Throughout, pallet loading protects against damage.

Acme engineering is cooperating with the Armed Forces in pallet loading, effecting the same economies for war-time shipping as applied in the past to the movement and handling of peace-time production.

ACME STEEL COMPANY
2820 ARCHER AVENUE, CHICAGO 8, ILLINOIS

ACME STEEL CO. CHICAGO

WE'VE LEARNED A LOT IN OUR 50 YEARS

50 years of specialized experience in producing tanks and tubs for the textile industry *has taught us some things that will be valuable to you!*

Let us tell you about our complete Caldwell service, which includes Stainless Steel-lined tanks and tubs—round, rectangular and special shapes. *Catalog on request.*

W. E. CALDWELL CO.
INCORPORATED
2060 Brook St. Louisville, Ky.

Caldwell TANKS AND TOWERS

FINISHING OR DYEING PRODUCTION MAN

We have an opening for a man who has had experience in the finishing or dyeing field. He is either a foreman, or has the qualifications for a foreman. He may be presently employed in a cotton mill or textile plant. This is a wonderful opportunity to work into a splendid position. Excellent opportunity for advancement. Ideal working conditions in modern, well-equipped plant. Write fully, giving background and experience. All correspondence will be treated confidentially.

WRITE PERSONNEL DEPARTMENT

AMERICAN FINISHING COMPANY
Memphis, Tenn.

DAVIS AND FURBER

Earn a Manufacturing Profit By Using the Best Machinery and Supplies

DUSTERS
PICKERS
CARDS
MULES
WOOLEN SPINNING FRAMES
SPOOLERS
DRESSING FRAMES
NAPPERS
CARD CLOTHING
NAPPER CLOTHING
GARNETT WIRE
LEATHER RUB APRONS
LEATHER CONDENSER TAPES

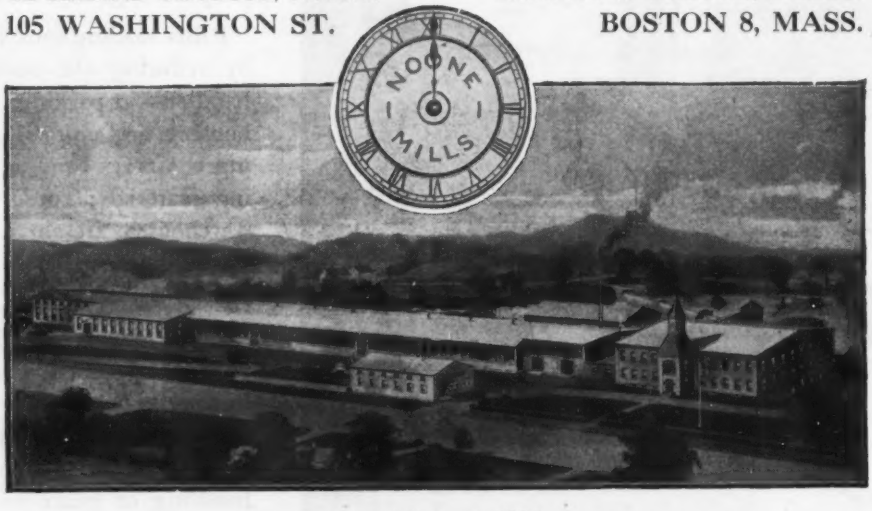
DAVIS & FURBER
NORTH ANDOVER, MASS.

THE ACCEPTED STANDARD

William R. Noone & Company

A. ERLAND GOYETTE, *President* — ARNOLD T. MALONE, *Treasurer*

105 WASHINGTON ST. — BOSTON 8, MASS.



Established 1831

Noone's Standard Slasher Cloths

Ask for **NOONE'S SLASHER CLOTHS** by name or style number.

Long experience in manufacturing Slasher Cloths and continuous experimenting have enabled us to produce several types of Slasher Cloth, each especially constructed to give best results on the particular kind of yarn to be sized.

The proper Slasher Cloth for each type of yarn means properly sized warps, less loom stops, easier weaving, more and better production, *and lower cost.* We can supply you the right cloth for your particular work.

On request we will have our representative call and discuss Slasher Cloths with you.

We are the oldest manufacturers of Slasher Cloth in America. Our experience enables us to build a Slasher Cloth that will meet your most particular demand. Use **NOONE'S SLASHER CLOTHS** and be convinced.

Sole Agents for

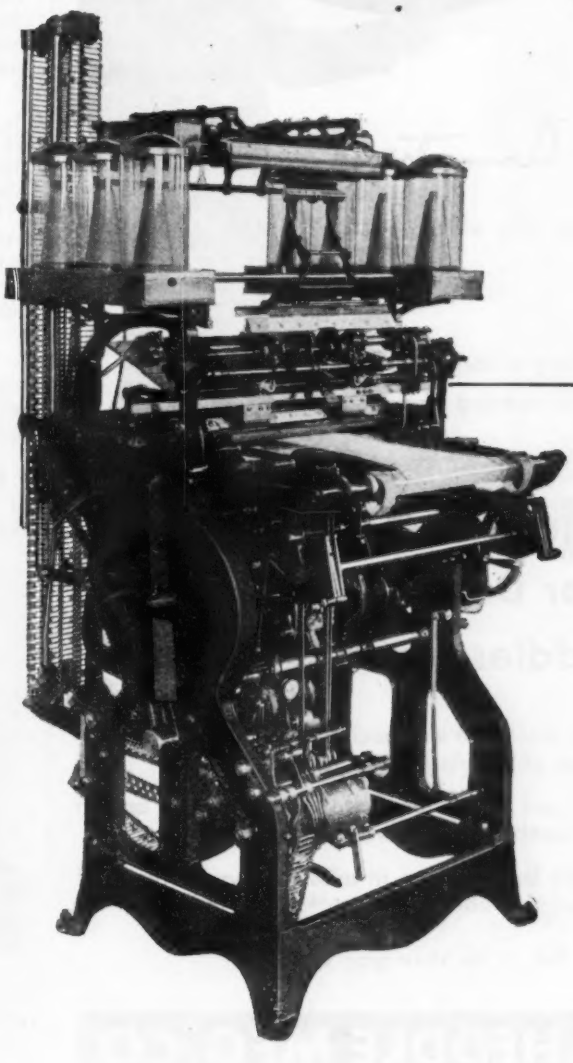
The Joseph Noone's Sons Company

PETERBOROUGH - - - - - - - - - - - NEW HAMPSHIRE

Use Noone's Roller Cloths, Noone's Slasher Cloths, Noone's Clearer Cloths.

Apply the production lessons of war-time days to meet the peace-time STOCKING *Demand!*

For the past several years, there has been only one primary consideration after quality was established—namely: *What machine will produce the most in the least time.* In the stocking industry, that machine was the



WILDMAN

Single-Head, Single-Unit, Full-Fashioned

HOSIERY MACHINE

the machine that knits the entire stocking in *one operation,* perfect from top to toe, with no loss of time and labor to change over from leggers to footers, and eliminating the bad matching, etc. incident to this now outmoded method. Today, more than ever, the alert hosiery mill needs this thoroughly modern machine to meet the rising tide of competition. Let us tell you more about it; its many innovations, economies and exclusive features.

WILDMAN MFG. CO. Norristown, Pa.

of Atlanta, Ga. office

says:

"In this territory a large percentage of mills weaving Heavy Duck are using

Ste-Hed-Co
Master Duck Heddles

These heddles are made of Special Analysis Steel to withstand the strain of weaving heavy yarns.

Their use will cut down loom stoppage due to broken heddles and thereby increase weaving efficiency.

Their value has been proven in mills making all types of heavy duck and tire fabrics, both cotton and rayon.

Ask us to show you samples."

STEEL HEDDLE MFG. CO.
2100 W. Allegheny Ave., Philadelphia 32, Pa.
and
SOUTHERN SHUTTLES DIVISION
621 East McBee Ave., Greenville, S. C.

NEWS ABOUT Suppliers

The Terrell Co., 1200 North Church St., Charlotte, N.C., has been organized as the exclusive sales representative for The Terrell Machine Co., as well as for the rubberized-fabric products of the Denman Tire & Rubber Co., Warren, Ohio. The Terrell Co., has also taken over sales representation for Economy balers, made by Economy Baler Co., Ann Arbor, Mich., in the territory formerly served by The Terrell Machine Co. The new company retains the sales personnel of The Terrell Machine Co., and agency contracts with Geo. Thomas & Co. Ltd., Manchester, England; W. J. Westaway Co. Ltd., Hamilton, Ontario, and Montreal, Quebec; E. L. Jasper, Elizabeth, N. J.; R. D. Hughes Sales Co., Dallas, Texas; and Roberto Zander, Buenos Aires. The Terrell Machine Co., incorporated in 1917, until July 1 of this year had its own sales representatives. More efficient service is the aim in separating the sales and production organizations. E. A. Terrell is president, W. S. Terrell, vice president and treasurer, and Mrs. Jane J. Terrell is secretary of the new organization.

E. A. TERRELL, president of The Terrell Machine Co., Charlotte, N. C., who has organized The Terrell Co. which is taking over all the previous sales activities of The Terrell Machine Co.

Calco Chemical Division of American Cyanamid Co., Bound Brook, N. J., has appointed James L. Naylor as assistant manager of its dyestuffs department.

J. WARREN ROBERTS, recently appointed branch manager of the Allis-Chalmers Mfg. Co. office in Chattanooga. Prior to joining the Allis-Chalmers Atlanta district office in 1941, Mr. Roberts was employed by the Nashville Railway & Light Co., Tennessee Electric Power Co., Allied Engineers, Inc., and Electric Power Board of Chattanooga.

Draper Corp., Hopedale, Mass., has appointed Jose Via, Jr., as Mexican representative, with headquarters in Mexico City. A native of Mexico, Mr. Via is a graduate of Lowell Textile Institute. He was employed for several years in Mexican textile mills and has been a member of the Draper organization in this country for the last two years.

Hermas Machine Co., Hawthorne, N. J., has added G. P. Mason, son of George H. Mason, company president, to its staff. Young Mr. Mason worked in the plant and drawing room summers while studying at Lehigh University and the University of Miami. He entered the Army early in the war and when recently released had attained rank of captain with the 15th Air Force. He flew 50 missions in the Mediterranean theater and holds four medals.

Scott & Williams, Inc., have opened a sales and service office in the Chattanooga Bank Building, Chattanooga, Tenn. P. D. Morrow, who has been associated with the firm at High Point, will be office manager and sales executive.

JOSEPH SCHEUERMANN, who has been named sales manager of Cameron Machine Co., Brooklyn, N. Y. He has been with the company for almost 20 years, lately as mid-west sales manager. Hereafter his headquarters will be at the main office of the company, 61 Poplar St., Brooklyn.

Gallowhur Chemical Corp., New York, has appointed Allan B. Clow to the newly-created position of executive vice president and general manager. He was formerly assistant to the general manager of Calco Chemical Division of American Cyanamid Co.

Wyandotte Chemicals Corp., Wyandotte, Mich., has appointed Dr. Thomas H. Vaughn as director of research. For the last six years he has been assistant director, and previously was head of the organic division of Union Carbon & Carbide Research Laboratories. He now succeeds Howard F. Roderick who has been transferred to special assignments with the sales department of Michigan Alkali Division of Wyandotte Chemicals. Edward Heiser is now manager of the Cincinnati office of Michigan Alkali Division of Wyandotte Chemicals. Mr. Heiser joined the New York sales department of the then Michigan Alkali Co. in 1927. He succeeds G. T. Robinson who has been transferred to Chicago to manage J. B. Ford Division sales in the mid-western area.

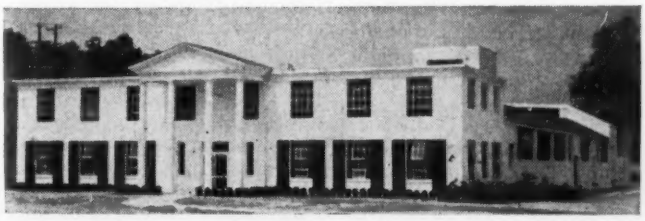
H & B American Machine Co., Pawtucket, R. I., has appointed Ben A. Lindberg, engineer-educator and labor relations specialist, as personnel director. He was formerly with Carrier Corp., Syracuse, N. Y.

Arnold Hoffman & Co., Inc., Providence, R. I., are planning expenditure of about $300,000 for the expansion of their Charlotte plant. The addition will provide about 30,000 sq. ft. It will be 100 x 210 ft., two stories high, with garages under the building. Arnold Hoffman has added to its staff as sales technician Walter L. Mills of Salisbury, N. C., for seven years a chemist with Fontaine Converting Works, Martinsville, Va., and with North Carolina Fabrics Corp., Salisbury.

American Gas Association, New York, N. Y., has elected H. Carl Wolf, as managing director effective Oct. 1, 1945, succeeding Alexander Forward, managing director since 1923, who is retiring from active business. Mr. Wolf was lately president of the Atlanta Gas Light Co., Atlanta, Ga.

Schmidt Mfg. Co., New Bedford, Mass., has moved to new quarters at 286 North St. The new plant comprises two stories. For 40 years previous, the business was conducted at 116 Front St.

Brown Instrument Co., Philadelphia, a wholly-owned subsidiary of the Minneapolis-Honeywell Regulator Co., has elected Henry F. Dever as president. Mr. Dever, who has been serving as vice president in charge of engineering for Minneapolis-Honeywell, succeeds Charles B. Sweatt as president of Brown. The lat-



TESCO CHEMICAL CO., Atlanta, Ga., has recently moved its headquarters into this modern plant, located on Northside Drive at the Seaboard Railroad. It will continue operation of its plant on Huff Road for the time being. Ultimately space at the new plant will be tripled, and its production of soaps, alkalies, and chemicals concentrated there.

D. W. Macintyre

of Atlanta, Ga., office

says:

"You should investigate the

Ste-Hed-Co
Master Duck
Frames

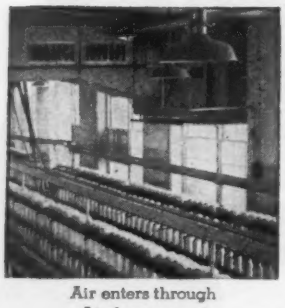
as they are made of the best grade hickory and equipped with tube construction center braces, which insure long life and rigidity.

It has been adopted in every heavy Duck and Tire Fabric Mill in the Atlanta Territory where they have been given a thorough trial.

Permit us to give you the details."

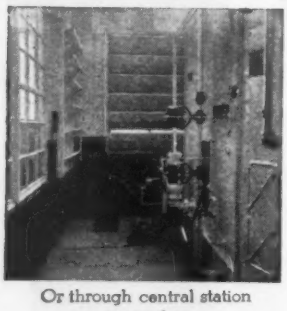
STEEL HEDDLE MFG. CO.
2100 W. Allegheny Ave., Philadelphia 32, Pa.
and
SOUTHERN SHUTTLES DIVISION
621 East McBee Ave., Greenville, S. C.

VITAL HELP
for old Spinning Rooms and Weave Rooms



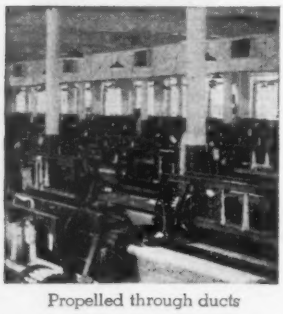
Air enters through Airchanger unit

Regain higher and more dependable. Greater strength and more uniformity in numbers.



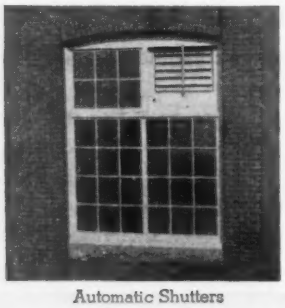
Or through central station air washer

Drafting of Fibers smoother and more compact. Waste and fly reduced to a remarkable degree.



Propelled through ducts

Fewer Breaks. Not as many stops or piecings. Not as many adjustments. Cleaner and very much more comfortable rooms.



Automatic Shutters let heat out

Better Product. And very often as much as 2% more production.

Certified CLIMATE with its exclusive method of control has been known to PAY FOR ITSELF in a year, or less.

Parks-Cramer Company

Fitchburg, Mass. Charlotte, N. C.

NEWS ABOUT SUPPLIERS

ter, vice president and director of Minneapolis-Honeywell, has withdrawn from Brown and will henceforth devote his entire attention to supervision of the expanded sales activities of the Honeywell organization and its subsidiaries. Mr. Dever will also assume the responsibilities of E. B. Evleth, general manager of Brown, who, because of ill health, has requested that he be relieved.

Crocker-Wheeler Division, Joshua Hendy Iron Works, Ampere, N. J., has appointed E. G. Cross as supervisor of the production planning and control department.

Mathieson Alkali Works, New York, have appointed Maurice C. Taylor, formerly manager of research at their Niagara Falls Laboratories, to be resident director of research and development. J. Douglas MacMahon, heretofore assistant manager of the sales development department, has been named assistant to the technical director; C. N. Richardson, superintendent of pilot operations, becomes manager of research engineering; and C. Gerald Day, a superintendent in the development department, becomes research and plant liaison engineer.

Monsanto Chemical Co., St. Louis, Mo., through its subsidiary I. F. Laucks, Inc., has purchased about 29 acres of land south of the city limits of Seattle, Wash. Produced at the new location will be synthetic resins for adhesives as well as coatings and wood preservatives now made in the two Laucks plants. Monsanto played a leading role in development and production of plastic body armor, Doron, made by combining a newly-developed resin with glass cloth under pressure to form a hard and rigid plate to be inserted in pockets of life vests or other garments.

Pennsylvania Salt Mfg. Co., Philadelphia, Pa., has appointed John E. Ohlson, formerly with Wyeth, Inc., to be its senior chemical engineer.

Taylor Instrument Cos., Rochester, N. Y., has named Raymond E. Olson as general sales manager. He joined the company in 1916. Frank S. Ward has been made industrial sales manager; Ralph E. Clarridge is sales engineering manager; W. Maben Griffith is commercial sales manager.

CHARLES D. EHRENGART, who has been elected president of the Richards Chemical Works, Jersey City, N. J., to succeed the late Richard Von Oesen. He was with Onyx Oil & Chemical Co., Jersey City, N. J., for the last 25 years as secretary of that company. For many years he acted as field technical and sales representative, and became sales manager of the company in 1930. He is also president of the Richards Chemical Co., Ltd., and secretary of the Onyx Oil & Chemical Co., Ltd.

Philadelphia Quartz Co., Philadelphia, has added Dr. Reynold C. Merrill, formerly with the U. S. Dept. of Agriculture in its Western Regional Laboratory, Albany, Calif., to its research staff.

B. F. Goodrich Chemical Co., Cleveland, Ohio, has awarded construction contract for its semi-works plant at Avon Lake to John Gill & Son, Cleveland. Cost is to be around $600,000. It will be used to develop manufacturing routines for new synthetic resins and chemicals.

General Electric Co., Schenectady, N. Y., has developed a long-range plan calling for unified action by electric power companies, machinery manufacturers, and electrical manufacturers. The plan is designed to accelerate the mechanization and electrification of American industry and farming in the postwar era. Labeled the More - Power - to - America program, the plan comprehends many months of research field investigation and analysis by G-E industrial engineers, and cooperation by representatives of other industries.

The Foxboro Co., Foxboro, Mass., has added Clarence Leslie Williams to its staff of sales engineers whose head-

DANA WARP MILLS

Westbrook, Maine

Cotton yarns, single and ply
Cotton warps, single and ply
Colored yarns and warps
Spun rayon—yarns and warps
Seamless grain bags.

ALDON SPINNING MILLS

ALFRED W. CAVEDON

Spinners of Fine Woolen

Merino & Specialty Yarns

SELL DIRECT — TALCOTTVILLE, CONN.

THOS. WOLSTENHOLME CO.

3300 Frankford Avenue, Philadelphia, Pa.

Yarns for All Purposes

French and English Spun Worsted
French Spun Zephyr
French Spun Merino

Representatives:—

Mr. Robert H. Perkins, 99 Chauncey St., Boston 11, Mass.
Mr. C. F. Peffer, The Merchandise Mart, Suite 1076, Chicago 54, Ill.
Mr. Arthur Bone, 4436 Worth St., Los Angeles 33, Cal.

THE OLDEST AND LARGEST
MANUFACTURER OF
Ring Spinning and Twister Travelers
In the UNITED STATES

American • Hicks • Wilson
United States Standard
Wentworth Double Duty
and Gravity Travelers

MAKE STRONGER YARN

National-Etartnap Finish
A New Chemical Treatment
Write Us

National Ring Traveler Company

354 Pine St., Pawtucket, R. I.
PHILIP C. WENTWORTH, Treas.
P. O. Box 1565, Providence, R. I., Charlotte, N. C.

Yes, that's a hole worn right through the ring!

The above ring came in recently as a sample with a rush order. Any operating man knows how seriously that set of deeply grooved rings must have interfered with production. If inspection shows any of your rings to be worn, give the machinery new productive life with new DIAMOND FINISH rings — the repair that pays dividends!

WHITINSVILLE (MASS.) SPINNING RING CO.

Makers of Spinning and Twister Rings since 1873

DIAMOND FINISH

Spinning Room Savings Shown By Clean Top Rolls

70% of mills use NON-FLUID OIL because it does not creep or drip from roll necks to damage yarn and roll covers.

The savings in clean yarn alone pay for NON-FLUID OIL. Further savings are made because roll covers are kept from oil rot. NON-FLUID OIL outlasts oil 3 to 5 times, saving on oil bills.

Write for instructive bulletin

New York & New Jersey Lubricant Co.

***Main Office:* 292 Madison Ave., New York, N. Y.**

Southern Agent, Falls L. Thomason, Charlotte, N. C.

WAREHOUSES

Chicago, Ill. — Providence, R. I. — Detroit, Mich. — St. Louis, Mo. — Atlanta, Ga. — Charlotte, N. C. — Greenville, S. C.

TRADE MARK REGISTERED
NON-FLUID OIL
U.S. PAT. OFFICE & FOREIGN COUNTRIES

MODERN TEXTILE LUBRICANT

Better Lubrication at Less Cost per Month

COMMONWEALTH
COLOR & CHEMICAL CO.

More than thirty years' experience in the manufacture of Chemical Specialties, Dyestuffs and Dyewoods for the Textile and Allied Trades

MAIN OFFICE AND WORKS:
NEVINS, BUTLER AND BALTIC STS., BROOKLYN 17, N.Y.
PHILADELPHIA CHICAGO
CLOVERSVILLE MONTREAL

quarters are in the company's New York office. He has been assigned to the northern New Jersey territory. Foxboro is reopening its branch office at Charlotte, N. C., closed in October, 1942, because of war conditions.

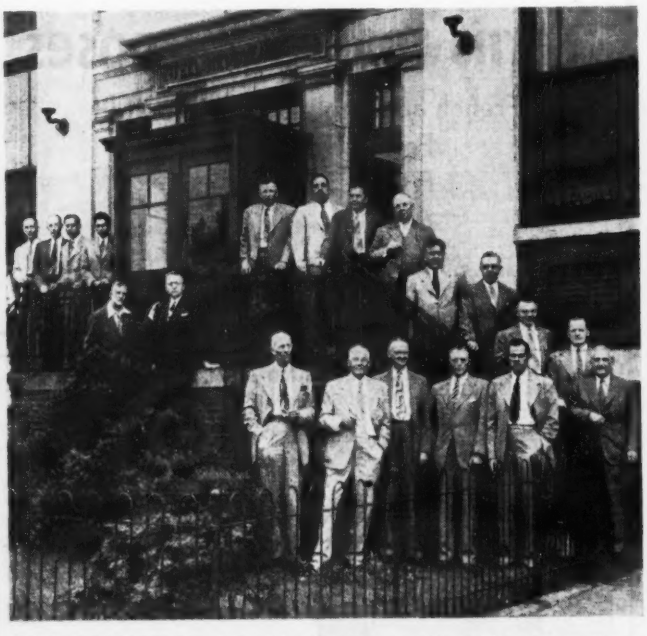
Worthington Pump & Machinery Corp., Harrison, N. J., has named Harry A. Feldbush, formerly works manager of the Holyoke, Mass., plant, as vice president in charge of engineering for the entire corporation. His headquarters will be at the general offices in Harrison, N. J. Ralph M. Watson, formerly chief engineer of the Centrifugal Engineering Division has been appointed assistant to Mr. Feldbush.

ANTHONY GARCIA, who has been engaged by Interchemical Corp., New York, for liaison work in Latin America. He will work with C. A. Richards, director of the export division.

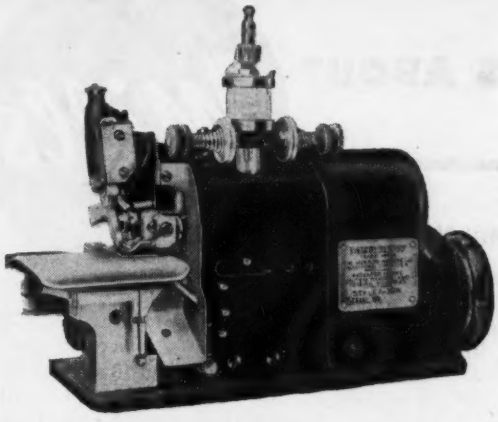
Cutler-Hammer, Inc., Milwaukee, Wis., has appointed F. A. Wright as assistant general sales manager. He has been associated with Cutler-Hammer since 1927.

Republic Steel Corp., Cleveland, Ohio, has elected N. J. Clarke as senior vice president and J. M. Schlendorf as vice president in charge of sales. Mr. Clarke has been vice president in charge of sales for Republic since September, 1930; and Mr. Schlendorf has been assistant vice president in charge of sales.

Atlas Powder Co., Wilmington, Del., will soon start construction of an additional new chemicals manufacturing unit at their Atlas Point Plant, five miles south of Wilmington, to cost more than $1,000,000. Production will be devoted to manufacture of the chemical, Sorbitol, used by textile, food, paint, pharmaceutical, and other manufacturers.



STEEL HEDDLE MFG. CO., Philadelphia, recently held an international sales meeting which brought together most of its field engineers and salesmen from Canada and Mexico as well as from the leading textile centers of this country. The meeting, at which the above picture was taken, was in anticipation of the company's postwar activities. J. J. Kaufmann (president and general manager) and Robt. J. Freitag (vice president, treasurer, and sales director) presided.



Merrow Class A Machines, illustrated, have made possible quality production, high speed and low operating costs to a degree greater than ever before. They are easy to handle, simple to adjust, sturdy in design, accurate in workmanship and readily adapted to many kinds of work. Let us or our distributor nearest you demonstrate the work of these machines on samples of your own fabric.

TRADE MARK
MERROW HIGH SPEED
REG. U. S. PAT. OFF. AND IN FOREIGN COUNTRIES

OVEREDGING, OVERSEAMING AND HEMMING MACHINES

For Use on Knitted and Woven Wear of All Kinds

Quality Results—High Production
Convenient Handling

Minimum Time-Out for Adjustment or Repair—Low Upkeep Costs

Obtain Maximum Quality Production by Using a Machine Suitably Arranged for Your Work—Our Distributors or Our Direct Representatives Are on Call to Advise You Suitable Machine Arrangements for Various Results and Proper Care and Operation of Machine.

ESTABLISHED 1838 INCORPORATED 1894

THE MERROW MACHINE COMPANY
STARTING ITS SECOND CENTURY

2803 LAUREL STREET **HARTFORD 6, CONN., U. S. A.**

Machine and Hand Knitting

Yarns

[French-Bradford]

for

BATHING SUITS
OUTERWEAR
HOSIERY
UNDERWEAR

★

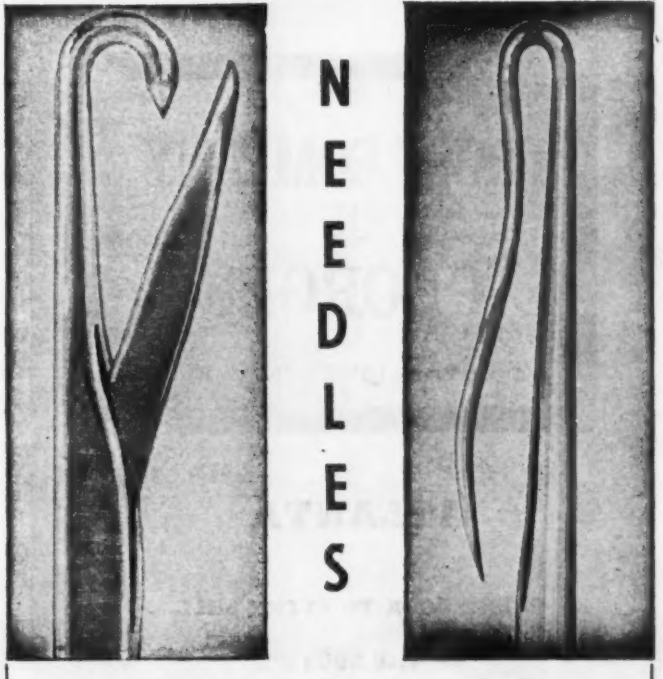
Complete color assortments

American Woolen Company

225 Fourth Avenue **New York**

CHARLES COOPER CO., INC.
Bennington, Vermont

Manufacturers of
Quality LATCH and SPRING-BEARD



also
Manufacturers of **THE FAMOUS COOPER CIRCULAR SPRING-NEEDLE RIB KNITTING MACHINES**

SOUTHERN FACTORING
for
SOUTHERN BUSINESS
A prompt, efficient service nearby . . . removing all credit risk and collection expense.
TRUST COMPANY OF GEORGIA
ESTABLISHED IN 1891
ATLANTA
"NEXT DOOR TO EVERY MILL IN THE SOUTH"

NEWS ABOUT Mills

Cotton Mill News

Alba Twine Mills, Inc., Stanley, N. C., have sold controlling interest in company to M. M. Rudisill, Lincolnton, N. C., and associates. New owners will continue operations as heretofore.

William H. Barnhardt & Associates, Charlotte, N. C., have purchased the controlling interest in Southern Webbing Mills, Greensboro, N. C.

Brazos Valley Cotton Mill, West, Texas, and **Waco Twine Mill,** Waco, Texas, have been purchased by H. Kahn and associates, of New York.

Brookside Mills, Knoxville, Tenn., have been sold for about $1,500,000 to Jacob Ziskind, of Fall River, Mass.

Connecticut Lace Co., Muller St., Norwalk, Conn., has awarded contract to Bartoli Electric Co., Norwalk, to improve plant electric wiring system to cost $3,000.

Dallas Cotton Mills, Dallas, Tex., is undergoing remodeling, and new spinning frames will be installed.

Empire Cotton Mills Division, Woods Mfg. Co. Ltd., Welland, Ont., is constructing an upper story over its card room, 75x163 ft. at cost of $65,000. New machines valued at $1,000,000 will be installed during the next two years.

Furniture Sales, Inc., Providence, R. I., have purchased the assets of American Multiple Fabric Co., for $23,850. Milton Young and Martin Bernstein, members of the buying corporation, plan to put capital and new machinery into the business and carry it on.

Globe Mills, Mount Holly, N. C., will carry out a complete modernization and expansion program at a cost of $100,000, with machinery and equipment to cost an additional $150,000, to manufacture combed peeler cotton yarns for weaving and specialty trades. The plant, of brick and steel construction, will be built by the Southeastern Construction Co., Charlotte, N. C.

Joanna Textile Mills, Goldville, S. C., are considering removal of plant to Chicago, Ill., where expansion will be carried out. Estimates of cost of transfer are being made. Company is controlled by same interests operating Western Shade Cloth Co., Chicago.

Kilby Cotton Mill, Montgomery, Ala., a department of the Kilby State Prison, was damaged on Aug. 21 to the extent of $10,000 by four negro inmates' welding torches and iron bars.

Lincoln Warping Co., Pawtucket, R. I., recently organized with capital of 100 shares stock, no par value, plans early operation of a local mill. James E. Flannery, Central Falls, R. I., is principal incorporator.

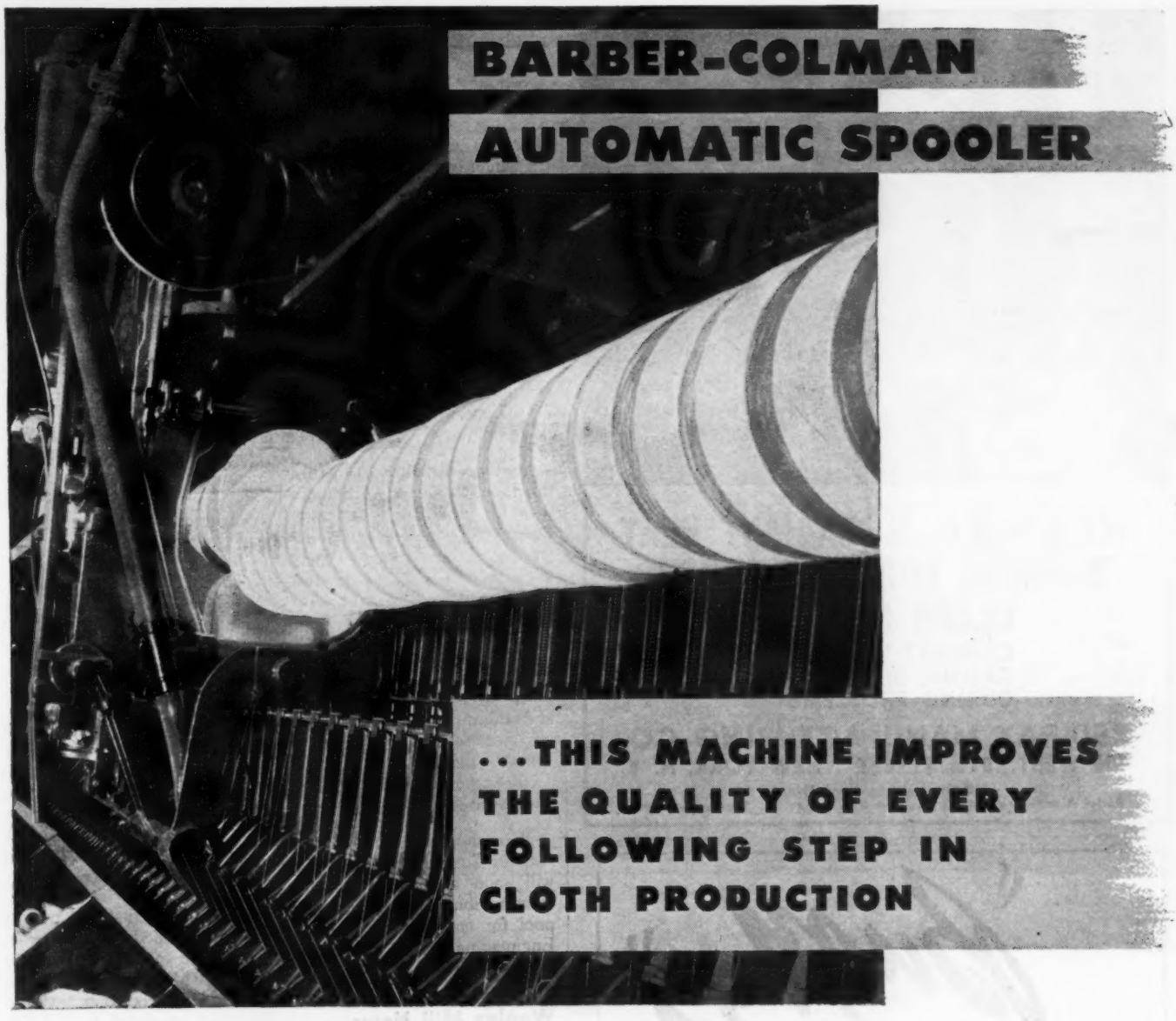
Manetta Mills, Lando, S. C., will soon install a new raw water pumping station and elevated tank for service at mill. Harwood Beebe Co., Spartanburg, S. C., is engineer.

Monticello Cotton Mills, Monticello, Ark., have been purchased by Frank M. Swirles, owner of T. A. Shaw & Co., Chicago, cotton goods selling agents, and Terrel Spencer, Monticello, secretary-treasurer and general manager of the mills for the last 19 years.

New Era Mills, Inc., Birmingham, Ala., is the new organization which is operating the sheeting mill formerly The Southern Cotton Co. of Ala. The parent company is the Railway Supply & Mfg. Co., Cincinnati, Ohio. Plant manager is J. R. Wikle and Curtis Wilmer is superintendent. Employs 350 persons.

Pepperell Mfg. Co., Opelika, Ala., plans expansion totaling $2,000,000. A new bed-sheet plant with bleachery and finishing plant will be erected.

Pilgrim Mills, Fall River, Mass., plan modernization and improvements in two-story mill, to cost about $45,000. F. Burton Mitchell, Foxboro, Mass., is architect.



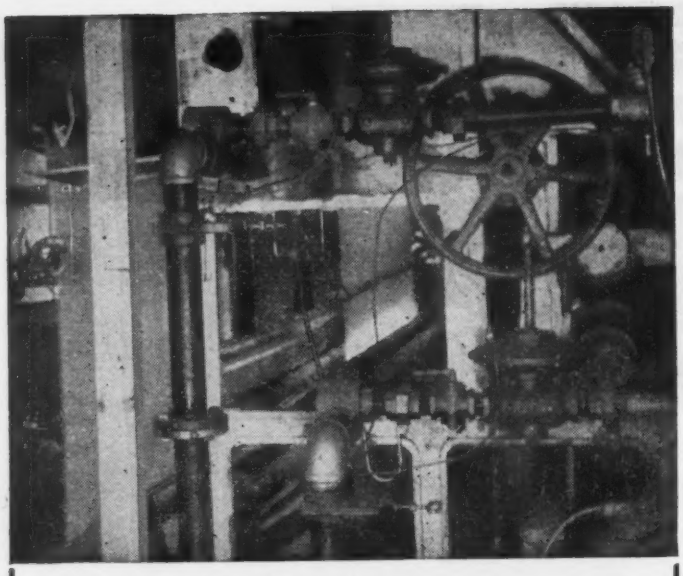
WHERE Barber-Colman Automatic Spoolers are in use, a better package is delivered to the warper, a better beam to the slashers, better loom beams to the weave shed, and better cloth to the finishers. The quality, accuracy, durability, and uniform production of Barber-Colman Automatic Spoolers are the basis for these valuable improvements: less warper stops, more uniform slashing, fewer loom stops, and less seconds. Any experienced mill man will appreciate machinery which not only increases production and lowers costs, but also gives him very little trouble, requires few repairs and very few service calls, and delivers a uniform package steadily with a minimum of down time. Any mill man can start toward achieving these beneficial results by investigating the possibility of installing Barber-Colman Automatic Spoolers and Super-Speed Warpers in his mill. *Ask your Barber-Colman Representative for data.*

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • DRAWING-IN MACHINES

BARBER-COLMAN COMPANY

ROCKFORD • ILLINOIS • U. S. A.

FRAMINGHAM, MASS., U. S. A. GREENVILLE, S. C., U. S. A. MANCHESTER, ENGLAND



RED-RAY RADIANT HEAT BURNERS FOR HIGH SPEED, CLEAN SINGEING

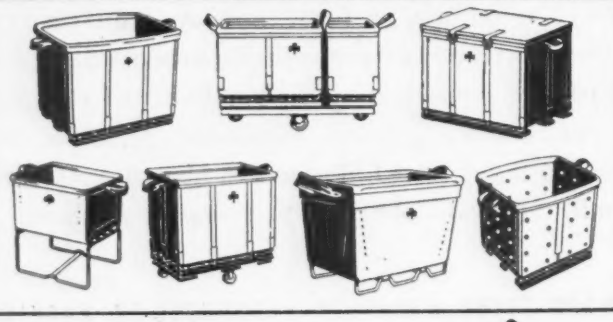
CONSULT US ON YOUR DRYING, SINGEING OR CURING PROBLEMS

RED-RAY MANUFACTURING CO.
455 WEST 45TH STREET NEW YORK, N. Y.

Canadian Representative:
Rudel Machinery Co., Ltd., 614 St. James St. West, Montreal

"Busy Baskets"

Shamrock Baskets are busier than ever these days. Their rugged construction is a source of satisfaction to users everywhere.



Shamrocks

MEESE, INC., Madison, Ind.

NEWS ABOUT MILLS

Sauquoit Mill of Standard-Coosa-Thatcher Co., Gadsden, Ala., has work under way on alterations and improvements, for which contract recently was let to Duke Stickney, Gadsden.

Sherman Mfg. Co., Sherman, Texas. An offer to stockholders to buy the capital stock of this company has been made by Jacob Ziskind, of Crescent Corp., Fall River, Mass. It is said that the plant has 10,000 Whitin longdraft spinning spindles installed in 1941 and 200 Draper Model X looms on duck fabrics.

Southern-Brighton Mills, Shannon, Ga., have work under way for new one-story warehouse, for which general contract recently was let to Daniel Construction Co., Greenville, S. C., reported to cost over $35,000.

Stark Mills of U. S. Rubber Co., Hogansville, Ga., have taken over one-story building at Franklin, Ga., and will equip at once for branch mill for thread manufacture. About 5,200 spindles will be installed with accessories.

Winnsboro Mills of U. S. Rubber Co., Winnsboro, S. C., will soon award contract for construction of new swimming pool for employes. Tomlinson Engineering Co., Columbia, S. C., is engineer.

Woolen Mill News

Ayer Mill of American Woolen Co., Inc., Lawrence, Mass., was damaged by fire recently which partially destroyed the dye house, and caused an estimated damage of $50,000.

Barre, Mass.—Space has been leased by Frank Murch who will soon begin manufacture of a hand woven fabric for men's and women's coats, mufflers, blankets and other articles. Sidney Little, of Atlanta, Ga., has been named manager of the new enterprise.

Connecticut River Mills, 450 Seventh Ave., New York, have purchased former mill of Brampton Woolen Co., Sunapee, N. H., and will remodel and improve for new woolen mill. Plant has been idle for several years.

G. Hilmar Doehne & Associates will establish a new plant for manufacture of wool and mohair at New Braunfels, Tex.

Esmond Mills Ltd., Granby, Que., are reported to be considering the erection of a new plant in Perth, Ont. The company produces part-wool blankets, Indian blankets, etc.

Forstmann Woolen Co., plans expenditure of $1,000,000 for additions and improvements to its plant at Garfield, N. J. The company's headquarters are in Passaic, N. J.

Hill Woolen Mills, Inc., North Main St., Norwich, Conn., recently chartered with capital of $50,000, have leased local building for new mill for manufacture of woolen yarns. At later date it is proposed to convert plant for rug manufacture. W. S. Hill is president.

Jane Mfg. Co., Spencer, Mass., has been formed for spinning wool yarns. Michael Burgen is proprietor. Plant has four sets of cards and four spinning mules.

Massachusetts Mohair Plush Co., Lowell, Mass., previously reported, has let contract to Tredenick-Billings Co., Boston, Mass., for proposed one-story addition, to cost over $40,000, with equipment, and will begin superstructure at once.

Raylaine Worsted Co. lost 30 tons of baled processed wool in a fire at the Amoskeag plants, Manchester, N. H. Power lines were damaged and loss was estimated at $50,000.

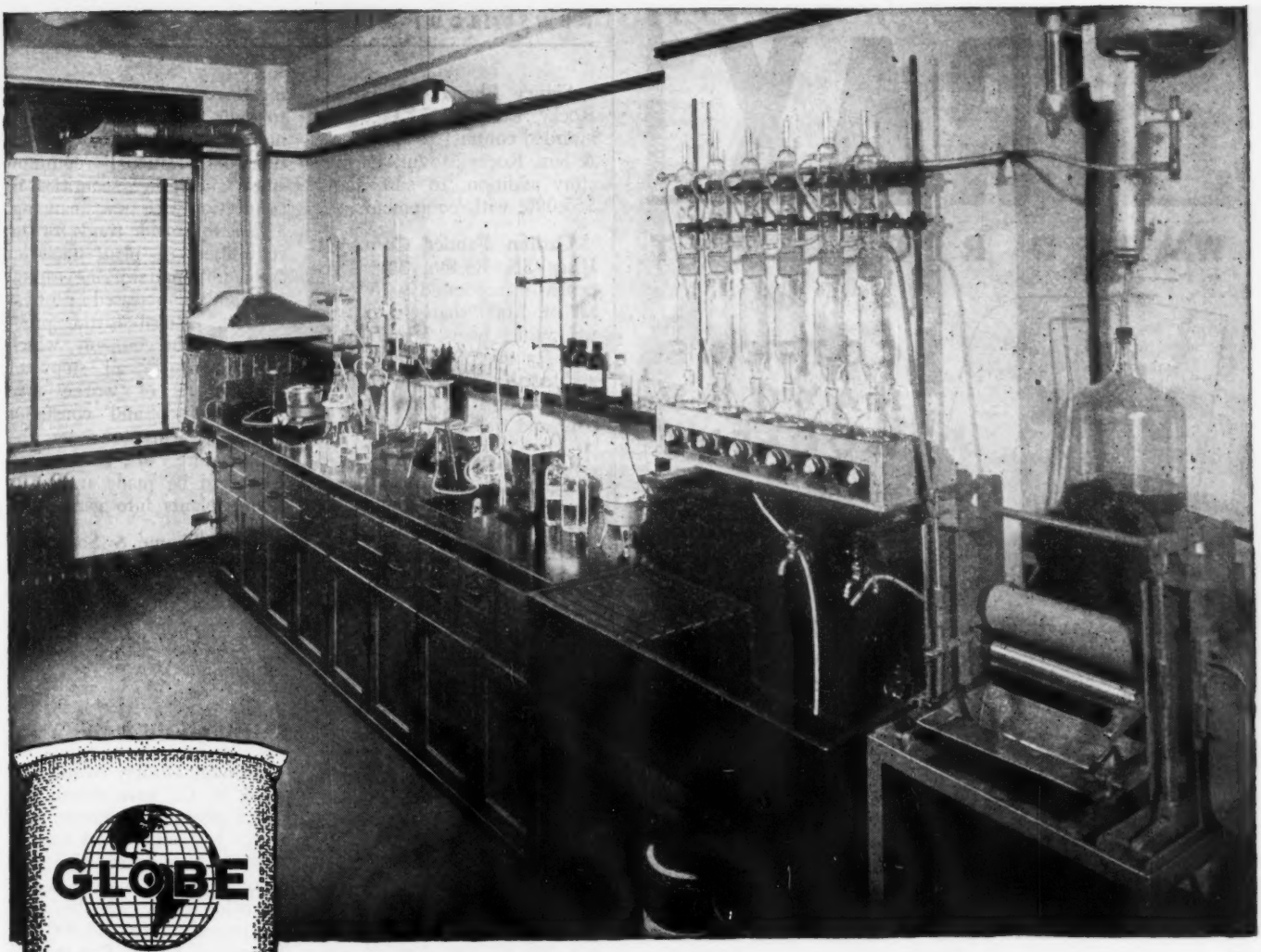
Slingsby Mfg. Co., Ltd., Brantford, Ont., is erecting an additional story on its textile mill, to be 40x50 ft.

M. T. Stevens & Sons Co., Peace Dale, R. I., has sold the majority of the houses forming local housing development to Burleigh L. Pratt and associates, who will operate property under name of Peace Dale Real Estate Trust.

Rayon Mill News

American Viscose Corp., Meadvile, Pa., plans one-story addition for expansion in rayon yarn department. Bids scheduled to be asked soon.

Amoskeag-Lawrence Mills, Amory Worsted Mills, and **Amoskeag Mills**, of Manchester, N. H., controlled by Mack Kahn of New York, have under construction a miniature plant to be used as a testing laboratory.



Looking Ahead to Better Textiles

OUR experienced technicians, using the complete facilities of our textile laboratory, at Greenville, S. C., have successfully solved many problems in the use of starch. We cordially invite you to consult them if you have any starch problems. Their services are at your command.

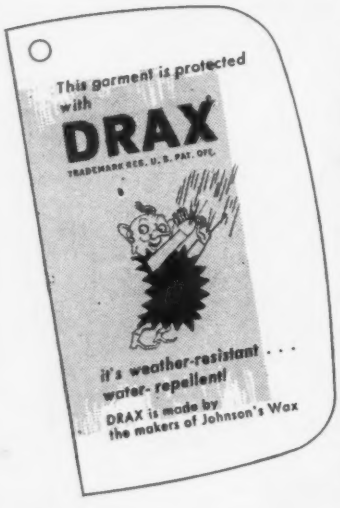
CORN PRODUCTS SALES COMPANY

Greenville, S. C. Greensboro, N. C. Spartanburg, S. C.
Birmingham, Ala. Atlanta, Ga.

DRAX

WATER REPELLENT

for


This garment is protected with
DRAX
TRADEMARK REG. U. S. PAT. OFF.
it's weather-resistant . . . water-repellent!
DRAX is made by the makers of Johnson's Wax

COTTONS
RAYONS
WOOLENS

Drax treated fabrics are water repellent. They also resist spotting, staining and perspiration. The Drax process does not affect the appearance, texture or porosity of the fabric. Drax is a one bath water repellent and is applied on the quetch, padder, jig or beck. Efficient -- Economical -- Durable.

BURKART-SCHIER CHEMICAL CO.

BURK-SCHIER CHATTANOOGA, TENNESSEE BURK-SCHIER

PENETRANTS • SOFTENERS • SOLUBLE OILS • FINISHES

THE TERRELL CLEANING AND HANDLING SYSTEM

The improved TYPE K stripper; Automatic Bobbin Box Hoist and Conveyor Elevator—a modern, compact system for increasing the efficiency and lowering the cost of bobbin cleaning and handling.

The **Terrell Machine Co.** *Inc.*

CHARLOTTE, N. C.

James F. Notman.....Needham, Mass.—N. E. States
E. W. S. Jasper, Inc., Elizabeth, N. J.—Penn., N. J. and N. Y.
W. J. Westaway Co., Ltd.....Hamilton and Montreal, Canada
Geo. Thomas & Co.....Manchester, England.—European Agt.

Sidney Blumenthal & Co., Rocky Mount, N. C., have awarded contract to D. J. Rose & Son, Rocky Mount, for one-story addition, to cost about $65,000, with equipment.

Carlinn Fabrics Corp., 81 Essex St., Boston, Mass., recently incorporated with capital of 1,000 shares stock, no par value, plans operation of mill for manufacture of rayon and cotton fabrics in vicinity of city. Carl G. Linn is president and treasurer.

Cavedon Yarns, Inc., Woonsocket, R. I., recently incorporated with capital of 500 shares, no par value, plans operation of local rayon yarn mill. Alphonse Cavedon, 13 Bellevue Ave., North Smithfield, R. I., is head.

Cleveland Cloth Mills, Shelby, N. C., will add 120 new looms, more rayon throwing equipment and additional preparation equipment as part of an expansion program. Additional floor space to be added will approximate 25,000 sq. ft.

Colonial Textile Corp. has purchased Langshaw weave sheds, No. 5 and 6, New Bedford, Mass. N. A. Textile Mfg. Co. will occupy part of the property. Sam Elias, president of Colonial, will move equipment from Scranton, Pa., to New Bedford.

E. I. du Pont de Nemours & Co., Wilmington, Del., will expand facilities for production of nylon yarn at its Martinsville, Va., plant. Approximating $10,000,000 in cost, the new production facilities will be designed for the fine yarns needed for hosiery and other uses.

Gloria Rayon Mills, Johnson City, Tenn., plan one-story addition to cost about $60,000, with equipment.

Industrial Rayon Corp., Cleveland, Ohio, plans to establish a new rayon producing unit with capacity of 30,000,000 lb. annually at a location still unannounced. Cost is reported at $25,000,000.

Mansure Textiles, Inc., Bluefield, W. Va., will install additional machinery and facilities for increased output of upholstery trimmings, webbings, etc. Company is an interest of E. L. Mansure Co., Chicago, Ill.

Textron Inc., Providence, R. I., asked stockholders at a meeting scheduled for Aug. 28 to split present $1 par common stock 2 for 1 and to authorize additional common stock and other securities in connection with new financing. This is to provide funds for the acquisition of plant facilities and additional working capital to handle increased postwar volume. Royal Little, president, said the company, which is engaging in all steps of manufacture of woven synthetic fabrics and consumer products, plans to enter the manufacture of tricot knit fabrics to be made up in its sewing plants into garments.

E. F. Timme & Son, New York, have purchased a 75-acre lot in Keene, N. H., and plan to build a plant with about 300,000 sq. ft. of floor space, at a possible cost of $2,000,000.

Knitting Mill News

Belmont Hosiery Mills, Belmont, N. C., have already begun a postwar expansion program. Excavation work has begun for a modern plant to manufacture 400-needle seamless nylon hose. The building will provide about 40,000 sq. ft. and will be the first in this section to be constructed entirely without windows and ventilated by air-conditioning system. Fluorescent lighting will be installed throughout the mill. The building will cost $200,000, and equipment $550,000. The plant is expected to be in operation by March, 1946.

C. & W. Mill, Kernersville, N. C., recently organized, has leased space in the H. E. Crawford Building, and will establish a knitting mill at once, for anklet manufacture. New company is headed by G. S. Coltrane and Ralph Wilson.

Camp & McInnes, Inc., a new corporation in Reading, Pa., will manufacture seamless hosiery. H. Stanley McInnes, formerly with Scott & Williams, Inc., New York, is president, and Erwin Camp is treasurer.

Chalmers Knitting Co., Amsterdam, N. Y., has sold a 70% interest to Louis Cowan, New York.

Cumberland Hosiery Co., Nashville, Tenn., has been chartered to manufacture hosiery and other products. Incorporators are M. Dennis,

"The Boss Will See You Now"

ALL items of production costs are now getting more and more attention throughout the knitting industry. And machine operating costs are among the first to be examined closely.

Are your machines in condition to survive the ordeal of continued war production—and still be ready to meet the coming competition for civilian markets? Remember that they may have to bear the brunt of early peacetime production, while your new equipment is being delivered and installed.

S & W offers you practical assistance in keeping your S & W machines in operation on an efficient and economical basis. Our service engineers will gladly make a check-up on their condition, without cost to you. S & W will then follow through with practical recommendations for repairs, reconditioning and replacement of worn parts. Many mills are finding this special S & W wartime service of great value to their overworked personnel. We believe it will help you not only to plan ahead safely, but also to make immediate savings in minimized downtime, fewer rejects, less yarn wastage. Write today for more complete information on the S & W maintenance plan.

The high efficiency of Scott & Williams knitting machines can *only* be maintained by using genuine S & W knitting machine replacement parts. You can count on prompt delivery, too, from S & W stockrooms at Laconia. Teletype service is free from our New York and High Point, N. C., offices.

"THIS IS THE SCOTT & WILLIAMS MACHINE AGE"

ESTABLISHED 1865

SCOTT & WILLIAMS

INCORPORATED

BUY WAR BONDS FOR VICTORY

EMPIRE STATE BUILDING NEW YORK 1, N. Y.

DIVISIONAL OFFICES: HIGH POINT, N. C., READING, PA.

WHITMAN YARNS

WORSTED · COTTON · SPUN RAYON

WHITMAN SERVICE

1852-1945

During 93 years The William Whitman Company, Inc., and its predecessors have served the interests of important mills and users of yarns, seeking to establish for its customers a steady flow of dependable, quality yarns.

ARLINGTON MILLS

LAWRENCE, MASS.

Bradford Spun Worsted Yarns, Natural and Slub-dyed Colors and Mixes.

MONOMAC SPINNING CO.

LAWRENCE, MASS.

French-spun Worsted and Merino Yarns. Specialty Yarns—Rabbits Hair, Rayon, Acetate and Other Blend Yarns.

NONQUITT MILLS

NEW BEDFORD, MASS.

Cotton and Spun Rayon Yarns, Merino Blends, Specialty Rayon and Wool Mixtures.

WILLIAM WHITMAN COMPANY, INC.

SELLING AGENTS

BOSTON, 78 Chauncy St. — NEW YORK, 261 Fifth Ave.

PHILADELPHIA, 1600 Arch St. — CHARLOTTE, Commercial Bank Bldg.

Charles A. Adami, and Vernon Primm.

Gloversville Knitting Co., Gloversville, N. Y., will move its equipment to the Schenectady plant, which employs about 200 operatives, as soon as conditions permit.

Grenada Industries, Grenada, Miss., are having plans drawn for one-story addition, to cost about $75,000, with equipment. E. L. Malvaney, Millsaps Bldg., Jackson, Miss., is architect.

Harris-Marshall Hosiery Mill, Inc., Galax, Va., recently formed with capital of $500,000, plans early operation of local knitting mill, including dyeing and finishing department, to specialize in men's half hose. Henry L. Harris, formerly vice-president, Galax Knitting Co., is president and general manager.

Holeproof Hosiery Co., Milwaukee, Wis., is reported considering new branch mill at Cullman, Ala., where sites are being investigated. This will supplement new mill of company at Quitman, Miss., previously reported, for which plans are being completed.

King Craft Hosiery Mills Co., Charlotte, N. C., recently purchased the equipment of Kingston Hosiery Mills.

Lebanon Knitting Mills Co., Pawtucket, R. I., has started work on a two-story brick and steel addition 35x42 ft. at 721 School St. Dwight Seabury Co. prepared plans and William Silva, Jr., Pawtucket contractor, is doing the work at a cost of $15,000. It will be equipped for a boiler plant and storage facilities.

Monarch Knitting Co., Ltd., Dunnville, Ont., will soon begin erection of one-story mill at St. Thomas, Ont., reported to cost close to $60,000, with equipment.

Raytric Knitting Mill, Watertown, Conn., will lease a storage building from Connecticut Light & Power Co., Bristol, Conn. New quarters will be utilized for knitting and the entire business will be moved there. The new company has been incorporated as the Riverside Industrial Corp.

Tennessee Knitting Mills, Columbia, Tenn., women's hosiery, will be air-conditioned and new machinery added. A recreational center will also be established.

United Hosiery Mills, East Chattanooga, Tenn., on Aug. 20 authorized an initial expenditure of approximately $200,000 for new equipment with which to facilitate increased employment.

Van Raalte Co., Inc., New York, N. Y., is completing plans for new one-story mill at Middlebury, Vt., and will begin erection early in October.

W. & W. Mill, Kernersville, N. C., recently organized, has begun erection of one-story knitting mill to manufacture childrens' anklets. Hugh Warren is head.

Waldridge Knitting Mills, Jonesboro, Ark., are starting to train the first group of 30 women to work in a new hosiery plant.

Whitehall Mills, Mount Holly, N. C., are adding a new department for looping, finishing, and dyeing men's hose. New equipment has been installed.

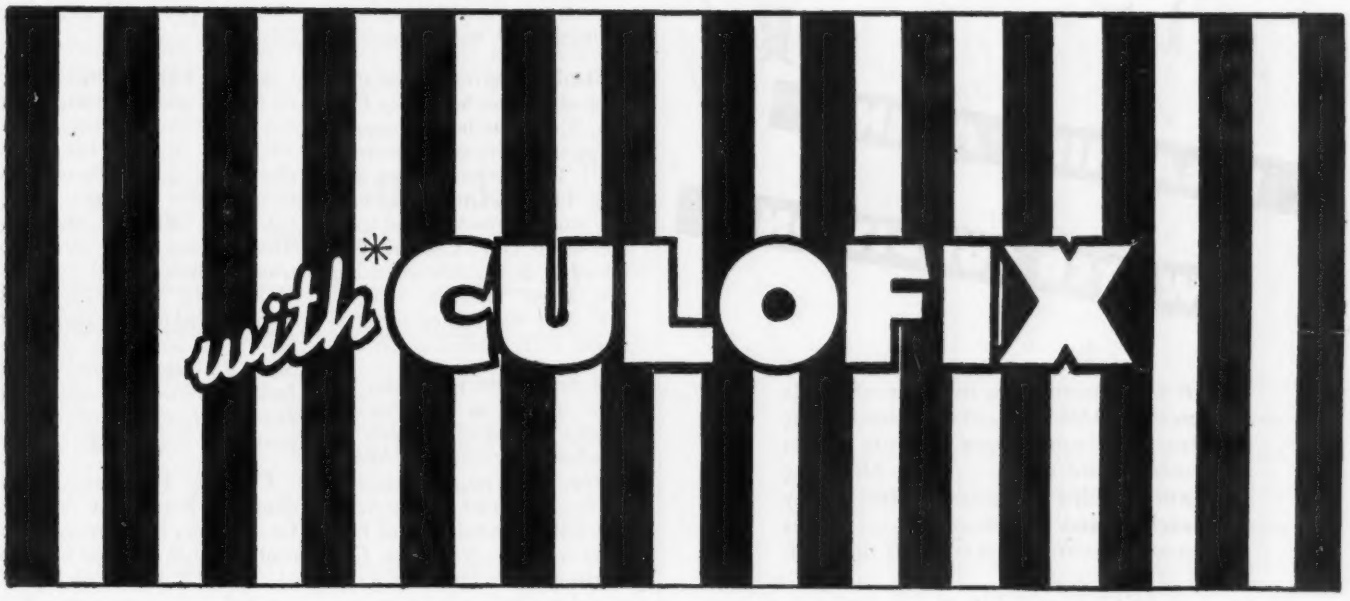
Processing Plant News

Agawam Dye Works, Inc., Lowell, Mass., have purchased the former Kunhardt Mill in Lawrence and will move into it. The mill is being renovated.

Dominion Silk Dyeing & Finishing Co., Ltd., Heriot St., Drummondville, Que., has awarded to Newton Construction Co., Ltd., Sherbrooke, Que., the contract for erection of an additional story on its plant in Drummondville. The addition, which will cost approximately $30,000, will be 26x152 ft.

Clearwater Mfg. Co., Clearwater, S. C., is reported planning new rayon finishing mill at Ashville, N. C., where property has been acquired. Cost about $1,000,000, with equipment. A power house will be built.

Table Rock Fabrics, Inc., is a newly organized concern in Greenville, S. C., which will engage in converting and finishing of cotton, rayon, and other fabrics. Officers are J. McD. Law, president and treasurer; Robert E. Buck, Jr., vice-president, and M. C. Patton, secretary.



No matter where the trouble occurs — whether while the fabric is batched up after dyeing, or in the finishing bath—Culofix will improve water fastness.

Culofix used as an after treatment following the dyeing operation is especially valuable for preserving crisp detail and contrast in prints of rayons, cottons and mixtures.

It has been used with complete success for hosiery where mixed fibres are present.

Culofix not only improves water fastness of direct colors but also imparts a very desirable soft, full finish thus eliminating an extra finishing operation.

If fastness to water is essential to your direct color dyeings, write for complete data. Our technical staff is at your service without obligation.

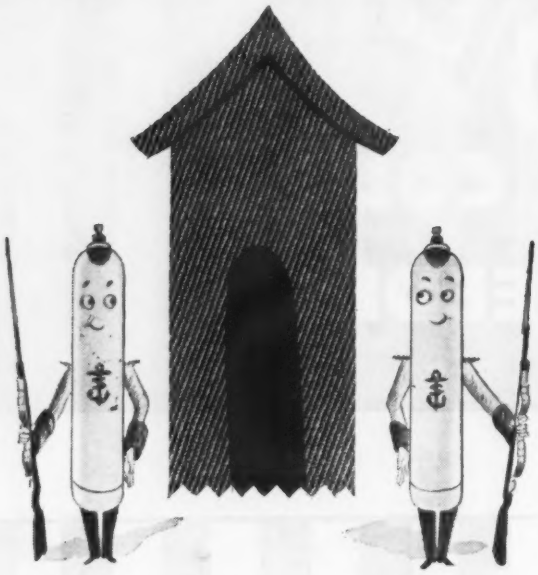
*Reg. U.S. Pat. Off.

ARKANSAS CO., INC.

Manufacturers of Industrial Chemicals For Over 40 Years.

NEWARK **NEW JERSEY**

Double Guard



BLEACHING AGENT

WATER CONDITIONER

An ever increasing number of mills specify SOLVAY Liquid Chlorine in their bleaching operations because of its *double guard* duty . . . As a *bleaching* agent it helps safeguard against spotty bleaching and uneven colors . . . and as a *water conditioner* it controls the quality of the water.

SOLVAY Liquid Chlorine is both versatile and economical. Its controlled quality, highest standard of purity, and dependable uniformity are your assurance of top performance.

SOLVAY SALES CORPORATION

Alkalies and Chemical Products Manufactured by The Solvay Process Company

40 Rector Street **New York 6, N. Y.**

SOLVAY

TRADE MARK REG. U. S. PAT. OFF.

LIQUID

CHLORINE

NEWS ABOUT *Men*

Martin H. Horchler has been appointed assistant vice president of William Whitman Co., Inc., New York, and has been assigned to general executive duties. He is succeeded by **George M. Jolly** as manager of the worsted yarn department.

C. Norris Rabold, chief chemist of Union Bleachery, Greenville, S. C., and consulting editor of TEXTILE WORLD, is visiting Germany in the interests of the American government. He was selected for this mission because of his extensive knowledge of textile finishing.

Stanley Converse, vice-president of Clifton Mfg. Co., Clifton, S. C. has been promoted to president-treasurer, succeeding J. Choice Evins, who died Aug. 14. **S. J. Dupre,** treasurer, was named president and treasurer of the D. E. Converse Co., Glendale, S. C., also succeeding Mr. Evins in that capacity. **J. C. Day** was named secretary of the D. E. Converse Co.

Robert T. Stevens, who has been serving in the Procurement Division, office of Quartermaster General, Washington, with rank of colonel, has been released by the Army and will rejoin the firm of J. P. Stevens & Co., New York. **Col. Christopher C. Strawn** will succeed him in Washington.

Douglas M. Orr has become counsel for Burlington Mill Corp., Greensboro, N. C. For the past eight years he has been supervising attorney for the Securities & Exchange Commission's corporation finance division, Philadelphia, Pa.

Dr. William P. Utermohlen has become a member of the staff of the Institute of Textile Technology, Charlottesville, Va., and is now engaged in organic chemical research. For the last five years he was with Tennessee Eastman Corp., where he served as a group leader in the research laboratory, working largely in organic synthesis.

J. R. McInvaill has resigned as general manager of Larkwood Hosiery Mills, Inc., Charlotte, N. C., and is now secretary-treasurer and general manager of Gastonia Full-Fashioned Hosiery Mills, Inc., Gasontia, N. C., succeeding **Robert Jackson.**

T. Lynwood Smith, attorney and civic leader of Asheboro, N. C., has been elected a vice-president of Adams-Millis Corp., High Point, N. C. Mr. Smith, who assumes his new duties Oct. 1, will be in charge of personnel and public relations.

Samuel Lipson, formerly secretary and assistant treasurer of the Manville Jenckes Corp., Manville, R. I., has been elected by the directors to be treasurer and director. He replaces **C. Richard Steedman** who resigned June 30, to become president and treasurer of Synthetic Yarns, Inc. **William A. Haskins, Jr.,** controller, has been named a director. **Sarto R. Gamache** and **Sidney Jackson** have been appointed assistant secretary and assistant controller, respectively.

Curt E. Forstmann, president of Forstmann Woolen Co., Passaic, N. J., resigned recently as chairman and member of the OPA's woolen and worsted advisory committee, and in a letter to **Administrator Chester Bowles,** renewed his criticism of OPA's textile and clothing program.

Walter Koller has been made vice-president and general manager of Hartford Spinning Co., Unionville, Conn. The company has extensive postwar plans, including an additional spinning mill.

William R. Addy, for the last 22 years associated with the Francis Willey & Co., Boston, has become connected with Fred Blanchard, Inc., wool merchants at 222 Summer St., Boston, Mass.

Channing W. Souther, who has been in charge of the Boston offices of Arthur I. Darman Co., Inc., for several years, has resigned as of Aug. 15 to open a commission processing plant to sort, blend, dust, and scour

Perfect Butted Seams for Faster and Smoother Finishing

The Rayer & Lincoln Rotary Sewing and Marking Machine, fitted with the latest *Dinsmore Improved Positive Stripping Attachment* and showing the application of the *Merrow Butted Seaming Head.* Sews a strong, flat, butted seam, trims the goods evenly with a narrow margin and automatically marks each piece as sewing is done. This machine will save its cost each year—you need it for modern, low-cost finishing. The Merrow Butted Seaming Head can be applied to your present machine—write for estimate of cost.

DINSMORE MFG. CO.
SALEM, MASS.

Acme Products

for seamless hosiery knitting

Speak for Themselves

Up-To-Date Machines
Needles

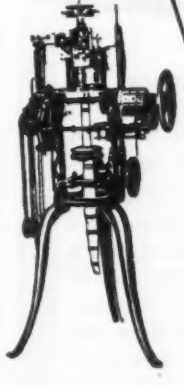
Economy Makers

ACME KNITTING MACHINE & NEEDLE CO.
FRANKLIN, N. H.

UP GOES PRODUCTION

DOWN COMES OVERHEAD

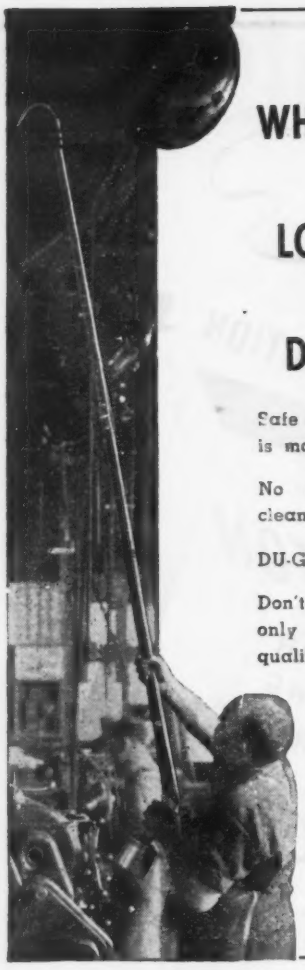
WITH BRINTON CIRCULAR KNITTING MACHINES



BRINTON Circular Knitting Machines keep quality high—increase production—lessen shut-downs—and reduce overhead. They keep on performing day after day—with a minimum of attention. That's why you'll find Brinton's in the largest mills, where accurate and scientific records are kept to tabulate the performance of every unit. • We have been making Brinton's for over fifty years, and will be happy to figure with you on your immediate requirements.

Your inquiry will bring full particulars.

BRINTON
3700 KENSINGTON AVE.
PHILADELPHIA 24, PA.



TREAT BELTS
WHEN THEY NEED IT!

Use Our

LONGSHOT OILERS

And

DU-GRIP BELT OIL

Safe and twice as fast. Top efficiency is maintained at lowest cost.

No shutdown — no week-end belt cleaning.

DU-GRIP preserves, pulls, and cleans.

Don't be satisfied with a dressing that only preserves. You need all three qualities for hard-pulling belts.

Sample on request. Also booklet on "Better Belt Maintenance."

DU-GRIP MFG. CO.
3142 Bellevue Road
Toledo 6, Ohio

Determine Moisture Content
Within a FEW MINUTES

ACCURATE DEPENDABLE

Inexperienced Help Can Easily Operate

For testing raw stock, cotton, wool, silk, rayon, yard goods, etc.

The *Moisture Teller* is an inexpensive moisture tester. It assures savings in processing time, reduces rejections and improves product quality. Successfully used by many industries.

CONTROL EQUIPMENT SAVES TIME

Harry W. Dietert Co.
9330 ROSELAWN . . . DETROIT 4, MICH.

NEWS ABOUT MEN

wool waste under the name of the Souther Processing Co., Stoughton, Mass.

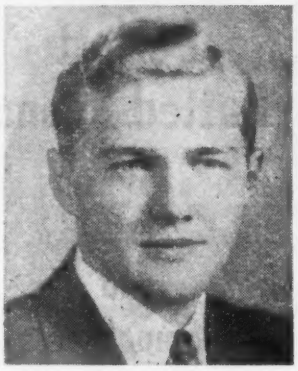
Gustave Gerstle, for the last 16 years with Native Laces & Textiles, Inc., has been made director of production in the lace and knit goods divisions. He will coordinate operations of the four mills affiliated with the company.

Dr. Frederick T. Peirce, former head of the testing department of Shirley Institute of England, has been appointed director of textile research at North Carolina State College School of Textiles, Raleigh, N. C. A native of Queensland, Australia, he has been a member of the Shirley Institute staff for 24 years. He is a fellow of the Institute of Physics, the Textile Institute and the Royal Society of Arts, he has been responsible for a number of outstanding textile developments, including cotton fire hose, and Shirley cloth for raincoats. In November, 1944, he came to the United States as a technical expert on the British Ministry of Supply Mission, at the request of the U. S. Quartermaster Corps.

Herman A. Dickert has been appointed director of textile engineering of the A. French Textile School, succeeding **C. A. Jones** who continues as professor of textile engineering and assistant director.

R. H. Tuttle, personnel director for several years of the industrial and public relations division of Marshall Field & Co., Leaksville-Spray, N. C., has been appointed director of industrial and public relations, and **Macon R. Miller** has been named assistant director of industrial and public relations for the company.

ARTHUR J. COBERT who has joined the staff of Burlington Mills, Greensboro, N. C., as technical advisor in the hosiery division, where he is devoting his time to experimental work. He was formerly manager of Se-Ling Hosiery Mills, Nashville, Tenn., and prior to that was connected with Real Silk Hosiery Mills, Indianapolis, Ind.



LEO W. RAINARD has joined the Institute of Textile Technology staff for work on high polymers. After graduating from MIT in 1940 he was head of a research group for Atlantic Research Associates until 1943, and then was in charge of the research laboratory of General Latex Chemical Corp., where he had close contact with development work on the utilization of natural and synthetic rubber.

L. E. Cromer has resigned as purchasing agent for Ninety-six Cotton Mills, Ninety-Six, S. C., Mathews Mills, and Greenwood Mills, both of Greenwood, S. C., a position he has held for 10 years, to accept the position of general manager of Greenwood Lumber Co.

Carroll Moore, Gastonia, N. C., formerly associated with W. L. Balthis Co., cotton brokers of that city, has become cotton classer for York Cotton Mills and Neely Mills, York, S. C.

John A. Aycock has resigned as plant engineer of Rock Hill Printing & Finishing Co., Rock Hill, S. C., and has accepted a position with Tennessee Eastman Corp., Kingsport, Tenn., where he will be plant maintenance engineer for the plastics division of Tennessee Eastman Corp.

Thomas E. Ewing, formerly of Old Hickory, Tenn., has been appointed personnel supervisor of Old Hickory rayon unit of E. I. du Pont de Nemours & Co.

Royal A. Stone, assistant engineer at the Amcelle unit of Celanese Corp. of America, Cumberland, Md., has been given a temporary assignment to the company's New York

CRANE

KNITTING MACHINES

meet the needs for Speed—
for Quality and Low Cost

CRANE Knitting Machines meet the demands of rapidly changing patterns and styles. Their middle name is versatility . . . plus smooth, fast running operation that eliminates expensive stops. Among their exclusive features are patented hardened Wing Burr Wheels and patented Thread Stop Motion. There's many a Knitting Mill in which batteries of Cranes are the mainstay of production.

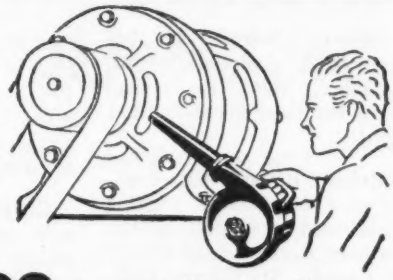
Let us tell you why
—and how . . . just **WRITE**

1870 **CRANE** 1945

MANUFACTURING CO.
LAKEPORT, N. H.

Spring Latch Needle
KNITTING MACHINERY

Blow out Dust — Keep Motors and Machinery Clean with



TORNADO **Portable Electric Blowers**

PREVENT motor burnouts, overheating and shutdowns. Keep motors and machinery clean. Blow out dust, dirt, lint, chips, etc. with the powerful, portable TORNADO Electric Blower. Quickly pays for itself in cutting repair and replacement costs. **Write for details and FREE Trial Offer**

BREUER ELECTRIC MFG. CO. 5086 Ravenswood Ave. CHICAGO 40, Illinois

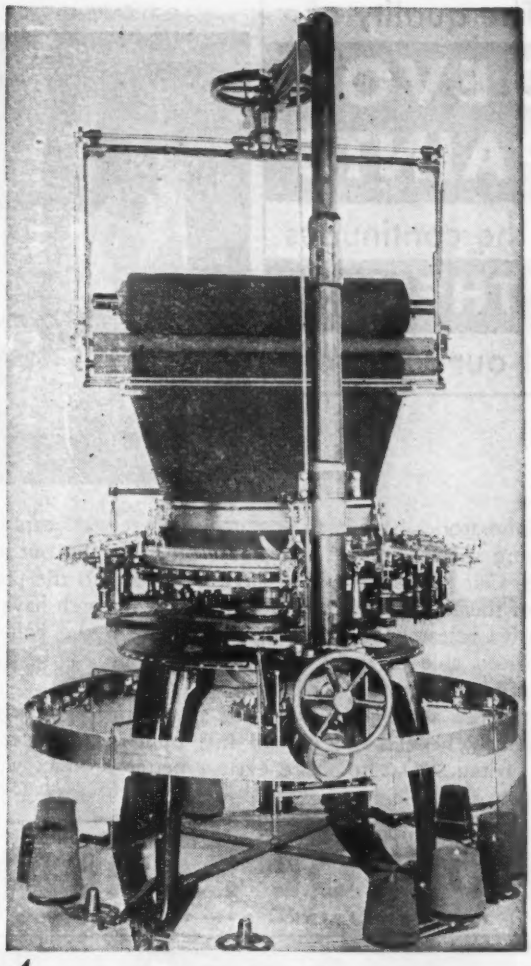
THE LOYAL T. **IVES** COMPANY EST. 1874

SPRING BEARD KNITTING NEEDLES

For Circular, Full Fashioned, Tricot and Milanese Knitting Frames, also Narrowing, Stand, Transfer Points and Welt Hooks for Full Fashioned Machines; Slides, Sinkers, Jacks, Guides or Flat Eyes, Sley and Milanese Points, Transfer Points or Quills, etc.

Sheet Metal Specialties to Order

NEW BRUNSWICK NEW JERSEY



4 reasons for using

TOMPKINS

SINGLE HEAD — SPRING NEEDLE

KNITTING MACHINE

1 **50% reduction in cost of production on most coarse or fine fabrics.**

2 **Virtually double the poundage produced by earlier models of Tompkins spring needle machines.**

3 **Produces a superior quality of knitted fabric, getting the most out of every grade and size of yarn.**

4 **Basis of all statements is on actual mill performance and production on S-1 models now installed.**

All reasons that will save you money! The new S-1 single head spring needle machine is especially designed for overcoating materials. At the same time, any fabric can be knit on it that is knit on the older type spring needle table. Production is approximately 100 yards per 8 hour day, using 6 feeds.

For further details write us direct.

TOMPKINS BROS. CO.
INCORPORATED
ONEIDA ST. SYRACUSE, N. Y.

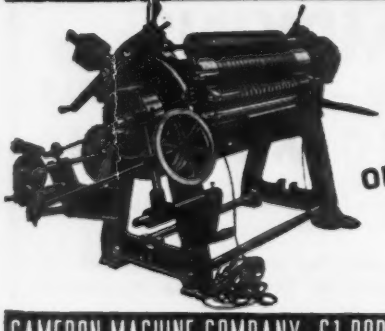
The quality of
DEVOE PAINTS
is the continuous
"THEME"
of our research

Our laboratories have been engaged in these war years in developing special finishes and paints called for by our armed forces. Our plants have been largely devoted to the production of them. But marching alongside war research have been extensive research and development to keep the paints we have been able to make for civilian use up to the Devoe standard, as permitted by Uncle Sam.

Let's keep all hands working to speed up V-J Day so we can jointly benefit and use all this built up experience in our constant effort to make even a better product with all materials available.

DEVOE PAINT
787 FIRST AVENUE, NEW YORK 17, N. Y.

Camachine 26-2A



FOR SPEEDY PRODUCTION OF NARROW STRIP IN ROLLS

CAMERON MACHINE COMPANY - 61 POPLAR ST. BROOKLYN 2, N.Y.
Midwest Office: 111 W. Monroe Street, Chicago 3, Ill.

INDUSTRIAL ENGINEERS
Specializing in
TEXTILES FOR MORE THAN A QUARTER OF A CENTURY
RALPH E. LOPER CO.
COST SYSTEMS WORK LOAD STUDIES
PAY ROLL CONTROLS
COST REDUCTION SURVEYS SPECIAL REPORTS
GREENVILLE, S.C. FALL RIVER, MASS.

NEWS ABOUT MEN

office, where he will assist the chief engineer.

William L. Marshall, Jr., attorney of Wadesboro, N. C., has been named secretary of the American Cotton Manufacturers Association, Charlotte, N. C.

William H. Brayer of Cone Export & Commission Co., New York, has been elected chairman of the slack suiting group of the Association of Cotton Textile Merchants of New York.

C. B. Merrett has been appointed manager of Bonner-Worth Mill of Dominion Woolens & Worsteds, Ltd., Petersborough, Ont. He succeeds **D. G. H. Melton,** who has been appointed manager of Regent Knitting Mills Ltd., St. Jerome, Que.

William H. Booth, a graduate of Lowell Textile School, Lowell, Mass., was recently appointed manager of Dobourg Division of Consolidated Piece Dyers Ltd., Cobourg, Ont. He was superintendent of dyeing and finishing there for five years, and was overseer of dyeing at Uxbridge Worsted Co., Uxbridge, Mass., for ten years.

Ernest Johnson, who has been with Arlington Mills, Lawrence, Mass., for several years, has been made assistant agent.

Robert Blezard has established a commission winding business to serve mills in the northern Rhode Island area at 27 Foundry St., Central Falls, R. I.

Russell A. Lenihan, Westerly, R. I., real estate dealer has been appointed permanent receiver of Narragansett Finishing Co., Narragansett, R. I.

J. Ed Millis and **Harry G. Bell,** Adams-Millis Corp., High Point; **F. H. Hallenbeck,** Scott & Williams, and **James McDowell,** Hemphill Co., High Point; **Ray Weaver,** Textile Machine Works, Greensboro; **Carl V. Cline,** Hickory; **J. Franklin McCrary,** Acme Mills, Asheboro; **W. J. Armfield, III,** Burlington Mills, and **John K. Voehringer, Jr.,** Mojud Mill, Greensboro, have recently been appointed as a nine-member advisory committee for the knitting department of North Carolina State College School of Textiles, Raleigh, N. C., by Governor Gregg Cherry.

HERMAN CHOPAK, president of Chopak Textile Co., Inc., New York rayon converters, has been elected a trustee of the Philadelphia Textile Institute Foundation. Mr. Chopak is also president and board chairm n of the Textile Distributors Institute, Inc., and chairman of the Rayon Textile Advisory Council for returning war veterans. He is serving as vice-chairman for New York of the Philadelphia Foundation's $2,000,000 campaign.

Wellington R. McConnell, a 29-year-old major of 13 months overseas duty, has been named executive officer of the Philadelphia Quartermaster Depot's Contract Termination Branch. He was a partner in S. E. McConnell & Sons Dry Goods Co., Atlanta, Ga., before he entered the Army in 1941, and was also affiliated with the Max H. Kessler Co., textile commission agents, also of Atlanta.

G. Edward Buxton, prominent in the textile circles of Rhode Island and one time president-treasurer of the B. B. & R. Knight Corp., Providence, R. I., and president of the National Association of Cotton Manufacturers, has tendered his resignation as assistant director of the Office of Strategic Services serving as a colonel second in command to Major Gen. William J. Donovan, OSS chieftain.

William C. Beddoe, advertising manager of the Congoleum Co., Can., Ltd., Montreal, has resigned to join Lees-Cochrane Co., Bridgeport, Pa., as director of advertising and sales promotion of the carpet and knitting yarn departments.

J. A. Christofferson, formerly with National Battery Co., Atlanta, Ga., is now plant manager of Archer Hosiery Mills, Columbus, Ga.

Lester E. Schultz of Iselin-Jefferson Co., New York, has

VICTOR MILL STARCH

Always A Winner!

The **WEAVER'S FRIEND**

- ☆ Penetrates Thoroughly
- ☆ Dependable
- ☆ Carries Weight Into the Fabric
- ☆ Always Uniform
- ☆ Boils Thin

Distributed by

CLAUDE B. ILER
Southern Manager
Greenville, South Carolina

L. J. CASTILE
Charlotte 3, North Carolina

F. M. WALLACE
Birmingham 9, Alabama

C. C. SWITZER
Greenville, South Carolina

THE KEEVER STARCH CO.
COLUMBUS 15, OHIO

ANNOUNCING

AMYSOL-DS—A Powerful Desizing Agent

With 0.1% to 0.5%, depending on the weight and construction of the material, you can materially speed up your desizing process. Simple, safe and easy to use with all natural mixed or synthetic fibres.

AMYSOL-WS—For Hydrolizing Starch Solutions

A small percentage of Amysol-WS in your starch solutions will rapidly penetrate the size into the yarn and control dusting, reduce end breakage, facilitate and speed up your manufacturing process. Combines readily with virtually all sizing additives. Easy and simple to use and truly a compound of tomorrow available today.

We invite you to make a trial of the new and perfected AMYSOLS.

PIONEER SALT COMPANY
940 N. DELAWARE AVE. PHILA. 33, PA.

2 STANDBYS FOR RAYON PROCESSING

V VIRGINIA

"VIRGINIA" *(LIQUID)* SO_2 **THE IDEAL ANTICHLOR**

A "natural" for rayon processing because low concentrations are highly effective.

- ★ removes active chlorine
- ★ neutralizes residual alkalinity
- ★ constant make-up by continuous flow

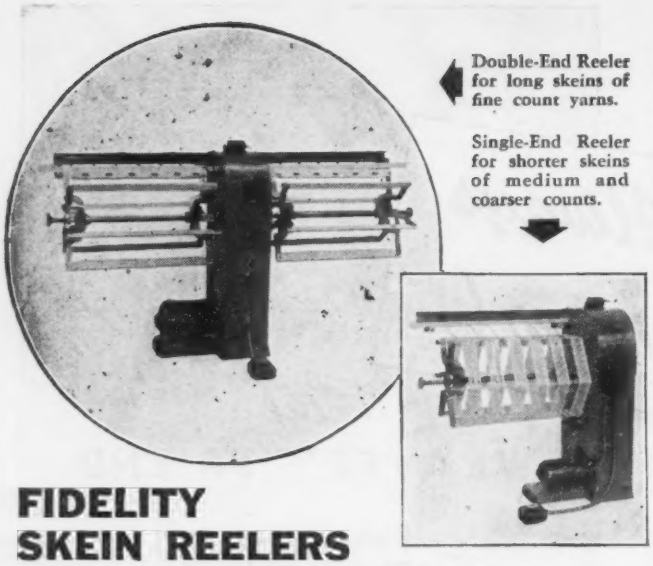
Shipped in steel cylinders containing 150 lb. net weight.

"VIRGINIA" *(MONOHYDRATE)* $ZnSO_4$ the high Zn content Zinc Sulphate prepared specifically to meet the purity standards of rayon processing.

- — crystalline, free-flowing
- — non-caking
- — easily and quickly soluble

Packed in 100 lb. bags; 425 lb. bbls.

VIRGINIA SMELTING CO.
WEST NORFOLK, VIRGINIA



Double-End Reeler for long skeins of fine count yarns.

Single-End Reeler for shorter skeins of medium and coarser counts.

FIDELITY SKEIN REELERS give you these 9 Advantages

1. All work at comfort level—no high lifting.
2. Less floor space—from 13% to 55% saving.
3. Less idle time per reel.
4. Less net doffing time.
5. Greater production in pounds of yarn per hour.
6. Generally shorter winding time through speed changes.
7. Fractional HP gear-head, brake-motor with foot-button release to leave operator's hands free.
8. Available to give straight or diamond "lay."
9. Easy, accurate control of skein weight and yardage.

Detailed information on request.

FIDELITY MACHINE COMPANY
3908-18 FRANKFORD AVENUE, PHILADELPHIA 24, PA.

Scott Testers Speed Reconversion

In research, purchasing, manufacturing and inspection *Scott Testers aid in speeding decision and safeguarding quality. Our many models for rubber include machines for tensile, hysteresis, burst, flexing twist, crepage, etc., to 1 ton tensile.

SCOTT TESTERS

* Registered Trademark

SCOTT TESTERS, INC. 95 Blackstone St. Providence, R. I.

CHAPMAN STATIC NEUTRALIZER

Reduces waste and Stabilizes the production rate in many operations

USED ON

CARDS - CONDENSERS - DRAWING FRAMES
SLASHERS-WARPERS-GARNETTS-FOLDERS-DRYERS
NAPPERS - SHEARS AND MANY OTHER MACHINES

CHAPMAN ELECTRIC NEUTRALIZER CO.
BOX 268, PORTLAND, MAINE

NEWS ABOUT MEN

been elected chairman of the gingham, seersucker, dress goods and fine chambray group of The Association of Cotton Textile Merchants of New York. **Joseph W. Valentine** of J. W. Valentine Co., Inc., New York, has been named chairman of the drills, twills and jeans group of the association.

Harold S. Brook, formerly employed as mill superintendent of Demetre, Sault & Ciriez, Ltd., St. Johns, Quebec, Canada, is now superintendent of Somersworth Textile Co., Somersworth, N. H.

Al Werner, knitting technician of American Viscose Corp., New York, has joined the Fabertex Corp., New York.

R. M. Bundy, vice president of Adams-Millis Corp., High Point, N. C., and previously chief of the hosiery section of the knit goods branch of the War Production Board, has been made chief of the entire knit goods branch of WPB.

Frank L. Asbury, until recently assistant general superintendent of Avondale Mills, has become manager and buyer for Opelika Apparel Mfg. Co., Opelika, Ala., newly organized concern.

J. F. Plexico has become assistant superintendent of Exposition Cotton Mills, Atlanta, Ga., succeeding **George Archer,** who has resigned. Mr. Plexico was formerly agent and superintendent of American Thread Co., Tallapoosa, Ga.

E. L. Bradshaw is now superintendent of Mecanal Mills, Inc., Salisbury, N. C., formerly Rowan Cotton Mills, Unit No. 2.

W. T. Morton has resigned as assistant superintendent and general overseer of carding and spinning at the Ottaray unit of Monarch Mills, Union, S. C.

Melvin E. Seals is new superintendent of Carlton Yarn Mills and Nuway Spinning Co., High Point, N. C. Formerly assistant superintendent of Dixie Mercerizing Co., Lupton City, Tenn., he succeeds L. E. Rudisill, who resigned.

Charles Joyce, carding overseer of Ware Woolen Co., Ware, Mass., has resigned and is now supervisor of carding at Lowell Woolen Mills, Lowell, Mass., succeeding the late John Bagley.

P. D. ATWOOD, who has been appointed to head a newly created Wilmington, Del., nylon district sales office of E. I. du Pont de Nemours & Co. A. W. Staudt has been made head of a nylon technical service unit there. The technical service unit will take over nylon product development work formerly directed by Mr. Atwood.

Earle R. Rutter, for a number of years head dyer at Pacific Mills, Lawrence, Mass., has resigned and has been succeeded by **Tom Peel,** overseer of dyeing in the worsted division for the last 17 years.

Arthur A. Worth, formerly at Mascoma Mills, American Woolen Co., Lebanon, N. H., has been transferred to Webster Mills, Webster, Mass., as superintendent. He succeeds B. K. Mitchell, resigned.

Harry H. Barker, formerly with Amoskeag Fabrics, Inc., has become plant superintendent for Ashland Corp., Jewett City, Conn. **Karl Reaber** resigned this position to go with Verney Mills.

W. Stanley Hill has resigned as superintendent of American Woolen Co., Norwich, Conn., to start a woolen yarn business himself. The plant, with three sets of cards, is located in Norwich.

J. F. Perry, formerly of Atlantic Mills, New Bedford, Mass., is now superintendent at Max Pfeffer & Sons, Fall River, Mass.

Joseph A. Chauncey, formerly with White Bros., Inc., Winchendon Springs, Mass., is now superintendent of Paulis Silk Mill No. 2, Pawtucket, R. I.

James A. Byars has been made superintendent of the Eva Jane Plant at Avondale Mills, Sylacauga, Ala. He was formerly with Pepperell Mfg.

RAPIDASE

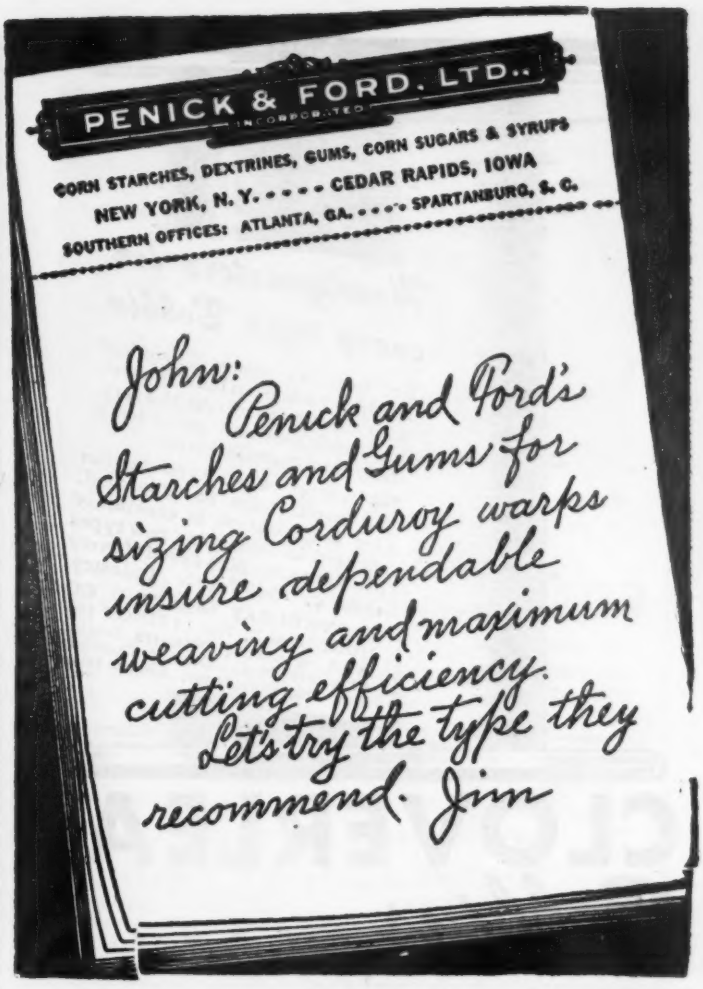
for de-sizing cottons, rayons and mixed goods

Assures rapid, dependable de-sizing
Our technical staff always at your service.

WALLERSTEIN COMPANY, INC.
180 MADISON AVENUE • NEW YORK

PENICK & FORD, LTD., INCORPORATED

CORN STARCHES, DEXTRINES, GUMS, CORN SUGARS & SYRUPS
NEW YORK, N. Y. • • • • CEDAR RAPIDS, IOWA
SOUTHERN OFFICES: ATLANTA, GA. • • • • SPARTANBURG, S. C.


John:
Penick and Ford's Starches and Gums for sizing Corduroy warps insure dependable weaving and maximum cutting efficiency.
Let's try the type they recommend. Jim

ROME SOAP MFG. CO.

MANUFACTURERS OF
Textile, Laundry
and
Special Soaps
ROME, N. Y.

WRITE US FOR SAMPLES AND QUOTATIONS

D. R. KENYON & SON
RARITAN, N. J.

MACHINERY
TENTERING
and DRYING

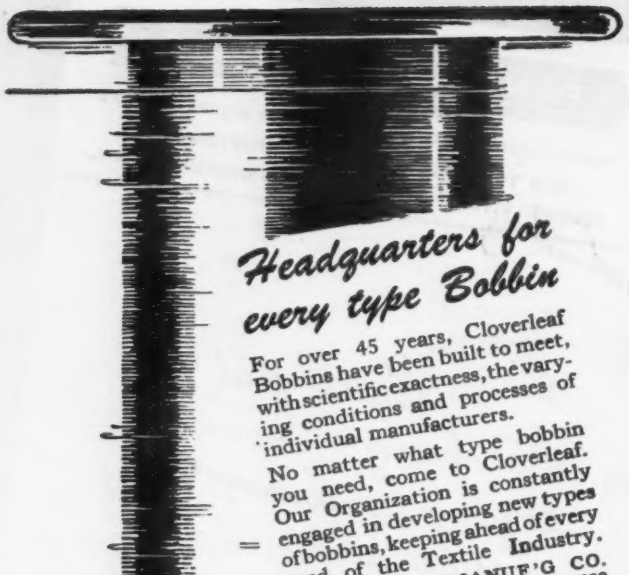
STANDARD SILICATES

ALKALI

DEPENDABLE-UNIFORM

Combining high soil-suspending power with controlled alkalinity over a wide range, STANDARD TEXTILE SILICATES are made in grades to meet your particular needs *exactly!*

DIAMOND ALKALI COMPANY
STANDARD SILICATE DIVISION
GENERAL OFFICES: PITTSBURGH, PENNSYLVANIA
Plants at CINCINNATI · JERSEY CITY · LOCKPORT, N.Y. · MARSEILLES
DALLAS, TEXAS


Headquarters for every type Bobbin
For over 45 years, Cloverleaf Bobbins have been built to meet, with scientific exactness, the varying conditions and processes of individual manufacturers.
No matter what type bobbin you need, come to Cloverleaf. Our Organization is constantly engaged in developing new types of bobbins, keeping ahead of every need of the Textile Industry.
CLOVERLEAF MANUF'G CO.
HONESDALE, PA. : : SINCE 1899
W. A. Kennedy, Dillworth Station, Charlotte, N. C.; Dana R. Crawford, Box 176, Providence, Rhode Island

CLOVERLEAF

Bobbins . . . . . .

New type cone drive spindle and bobbin available at end of war.

J. E. SIRRINE & CO.

GREENVILLE • SOUTH CAROLINA

Engineers

TEXTILE MILLS • RAYON PLANTS • KNITTING MILLS • DYE HOUSES
BLEACHERIES • STEAM UTILIZATION • STEAM POWER PLANTS
WATER • WASTE DISPOSAL • APPRAISALS • PLANS • REPORTS

"YOU CAN COUNT ON WAK COUNTERS"

They are

RUGGED
ACCURATE
DEPENDABLE

We build single, double and triple pick counters; yardage, rotary, ratchet and special counters.

Write — Phone — Wire

WAK INDUSTRIES
CHARLOTTE, N. C.

and Russell Mfg. Co., Alexander City, Ala.

Joseph Love, formerly of Morris Textile Co., Corinna, Me., is now superintendent of Lawrence Blanket Mills, Webster, Mass.

Francis Parent, formerly of Ludlow, Vt., is now overseer of carding and spinning in Jane Mfg. Co., Spencer, Mass.

William S. Petree, for the last five years supervising inspector of the Greensboro, N. C., district of the State Labor Department, has resigned to become personnel director for the Wrenn Hosiery Mills Corp., Thomasville, N. C.

Robert C. Ewan, superintendent of dyeing and finishing, Millville Mfg. Co., Millville, N. J., retired recently. He has been succeeded by **Richard D. Seed,** formerly of Kennyon finishing Co., Lawrence, Mass.

H. H. Hughes, formerly superintendent of Swift Mfg. Co., has resigned to enter business for himself, and has been succeeded by **C. H. Williams.**

S. J. Pitts, formerly assistant overseer, Bibb Mfg. Co., Columbus, Ga., is now weaving overseer of the Anderson Mill in Columbus, operated by Bibb.

John H. Fuller, formerly clothroom overseer of Bibb Mfg. Co., Columbus, Ga., is now overseer of twisting at Anderson Mill.

O. G. Morehead has become general superintendent of Berryton Mills, Berryton, Ga. He was formerly president and superintendent of Weldon Knitting Mills, Inc., Weldon, N. C.

Obituary

Dr. Richard B. Earle, 69, research chemist and authority on synthetic rubber, died at Cambridge, Mass., Aug. 13. He was a native of Worcester, Mass., and was educated at Worcester Polytechnic Institute and Harvard University, receiving the degreed of Sc.D. from the latter in 1902. He taught at the University of Chicago and the Massachusetts Institute of Technology; joined the staff of Hood Rubber Co., Watertown, Mass., spending three years in rubber research at Singapore; and later was employed by United States Finishing Co., Providence, R. I., retiring in 1942.

Robert Hill Freeman, 52, for many years president of the Newnan Cotton Mills, Newnan, Ga., died in New York Aug. 10. He was also at one time director of the Cotton-Textile Institute, American Cotton Manufacturers' Association, and the Cotton Manufacturers' Association of Georgia.

W. F. Howard, Sr., 63, superintendent of Pacific Mills, Lyman, S. C., since 1923, died Aug. 3 at Spartanburg, S. C.

James Holt Green, treasurer and general manager of the Glencoe Mills, Burlington, N. C., prior to entering the service in February, 1943, has been officially declared dead by the War Department after having been missing in the European theater since last March. He was a lieutenant in the army.

Richard Van Oesen, president of The Richards Chemical Works, Jersey City, N. J., died at Rockville Center, N. Y., recently. He was one of the organizers of the Onyx Oil & Chemical Co., Jersey City, N. J., founded 35 years ago.

Dr. Richard N. Mullikin, control manager of E. I. du Pont de Nemours & Co.'s Organic Chemicals Department, Wilmington, Del., died last month.

H. Jarrel Reid, 45, warp-size specialist with headquarters at Atlanta, Ga., for E. F. Houghton & Co., Philadelphia, died in Greensboro, N. C., Aug. 8. Mr. Reid served for many years in practical production capacities with leading Southern mills, among them Scottdale Mills, Bibb Mfg. Co., and Thomaston Cotton Mills.

S. M. Smith, a director of Frank G. North, Inc., Atlanta, Ga., and, since the organization of the firm, one of its leading salesmen, died July 24.

A complete dictionary and encylopedia of staple cotton fabrics

—What is that fabric?

—What's its construction?

—What can it be used for advantageously?

THESE questions are answered for you — specifically and definitely — in this book. "A long-time need by the textile industry and allied trades has been met by its publication," says *Textile World*. "Provides a text and reference book of inestimable value to textile manufacturers, designers, converters, selling agencies, students, wholesalers, department-store buyers, and persons interested in home economics. Included in the book are definitions, descriptions, constructions, and illustrations of the many types of plain-woven fabrics, leno fabrics, twills, sateens, crepes, terry, and other fabrics manufactured for apparel, household, and industrial purposes. Two features which merit particular commendation are the illustrations, natural size and enlarged, of nearly 200 different fabrics, and the excellent index."

John Hoye's

STAPLE COTTON FABRICS

241 pages, 6 x 9 illustrated, $3.50

Have you seen Moberg's

COTTON LOOMFIXERS' MANUAL

Brings you step-by-step, clear, practical instructions on all phases of cotton loomfixing. The material is so presented that the book can serve as a textbook for courses in loomfixing or as a self-study manual for those who wish to learn the art of loomfixing or who wish to improve their knowledge and skill.

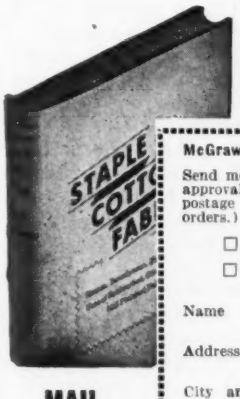
197 pages, 6 x 9
108 illustrations, $2.50

Note what this book covers:

1. Gray Plain-woven Fabrics and their Derivatives
2. Gray Leno-woven Fabrics
3. Gray Twill-woven Fabrics
4. Gray Satin-woven Fabrics
5. Staple and Specialty Dobby-woven Gray Cloths
6. Towelings
7. Colored-yarn Fabrics
8. Tickings
9. Flannels
10. Seat-cover and Awning Fabrics
11. Drapery Slip-covers, and Upholstery Fabrics
12. Table-cover Fabrics
13. Corset Fabrics
14. Bedspread Fabrics
15. Cut-pile Fabrics
16. Filled and Coated Fabrics

Descriptions and Names of Converted Cloths (Not Basic Fabrics)

MORE THAN 200 ILLUSTRATIONS, each showing a fabric natural size and as it would appear under a 5½x cloth counting glass



SEE THESE BOOKS 10 DAYS FREE

MAIL THIS COUPON

McGraw-Hill Book Co., 340 W. 42 St., New York 18, N. Y.

Send me books checked below for 10 days' examination on approval. In 10 days I will pay for books plus few cents postage or return them postpaid. (Postage paid on cash orders.)

☐ Hoye-Staple Cotton Fabrics, $3.50

☐ Moberg—Cotton Loomfixers' Manual, $2.50

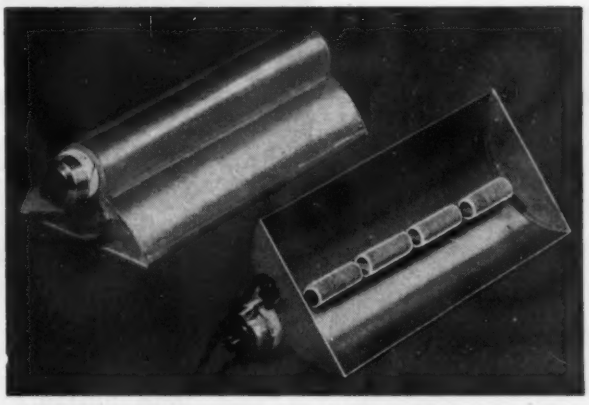
Name .....

Address .....

City and State .....

Position .....

Company FTW-9-45



The Doyle Infrared Dryer can be supplied in a range of sizes to suit a wide variety of applications.

For Fast, Thorough Drying—

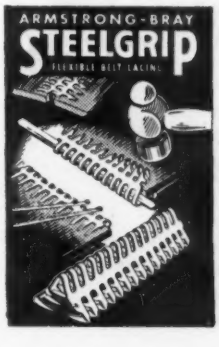
the DOYLE INFRARED OPEN GLOW DRYER

Cuts the drying bottleneck! Thoroughly proven by years of practical success in industry. Especially good when it can be attached directly to equipment to promote drying during fabricating, printing or other processing. Rugged, economical, easy to install, FAST, embodying the most modern ideas of infrared science. Please describe your requirements fully and expect a prompt, complete answer.

THE J. E. DOYLE COMPANY

1222 West Sixth Street, CLEVELAND 13, OHIO

FASTER DRYING • HIGHER PRODUCTION



PromptDelivery

ON BOTH STANDARD TYPES

— on **STEEL GRIP** Steel Lacing that is applied with a hammer. 11 sizes — convenient boxes or long lengths with wide belts. Have 2-piece hinged rocker pins.

—on **WIREGRIP** Belt Hooks that are applied with any lacing machine and come with extra blue aligning cards (patented) that assure uniform tension on every hook and prevent card-end waste.

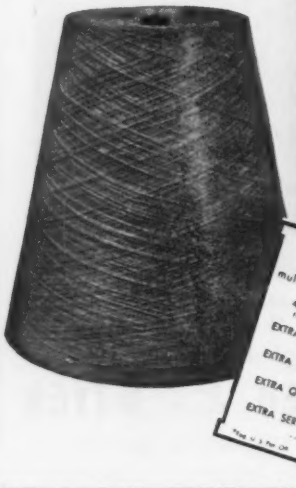
Write for Circulars

ARMSTRONG-BRAY & CO.

"The Belt Lacing People"

5340 Northwest Highway, Chicago 30, U. S. A.

AMERICAN



. . . more economical to use because . . . .

it runs more efficiently, producing a finer quality product that can be sold easier and more profitably

AMERICAN
YARN AND PROCESSING CO

MOUNT HOLLY, NORTH CAROLINA

CHATTANOOGA, TENN.
Mr. Tom Moore
735 Chestnut Street

PHILADELPHIA, PA.
Mr. Wm. S. Montgomery
3701 N. Broad St.

HIGH POINT, N. C.
Mr. E. J. Holbrook

MOUNT HOLLY, N. C.
Mr. Edwin Hutchison
Miss E. R. Abernethy
Mr. T. J. Davis

NEW YORK, N. Y.
Mr. Rowland Swallow
Empire State Bldg.

CHICAGO, ILLINOIS
Mr. E. W. Wood
222 West Adams St.

PERSIMMON SHUTTLES

Watson-Williams Persimmon Shuttles, subject to long usage on many different fabrics have passed every test of wear and faultless operation.

WATSON-WILLIAMS MFG. CO., Millbury, Mass.

NORTHERN REPRESENTATIVE: G. C. Burbank, 32 Beaconsfield Rd., Worcester 2, Mass. SOUTHERN REPRESENTATIVES: John W. Littlefield, 810 Woodside Bldg., Greenville, S. C.; Walter F. Daboll, 703 Jefferson Bldg., Greensboro, N. C.

Simplified **DESIGN**
Flexible **POWER**
Better **EVAPORATION**
More sensitive **CONTROL**

SOUTHWORTH HUMIDIFIER

Experienced textile men who know the merits of previous models of Southworth Humidifiers have found improvements in Model D that make it even more reliable and efficient.
Extreme sensitivity of control, and an "airplane propeller" type fan for greater evaporation, are two outstanding features.

NOTE
This advertisement is to remind you to include Southworth Humidifiers in your after-the-war plans. Frankly, we are 100% on war work and cannot make humidifiers at the present time.

THE SOUTHWORTH MACHINE CO.
PORTLAND MAINE

NEWS ABOUT MEN

to North Carolina where he organized and operated Nockton Mfg. Co., Biltmore, N. C.

Arthur William Wilkinson, 63, an official of the chemical branch of WPB in Washington died recently. He was founder of Sterling Products Chemical Co., Easton, Pa., and was secretary, treasurer and general manager of the firm for 25 years.

J. Choice Evins, 76, president and treasurer of Clifton Mfg. Co. and of the D. E. Converse Mfg. Co., Clifton, S. C., died Aug. 14 at Charlotte, N. C.

J. B. Courtney, 86, founder of the J. B. Courtney Woolen Mills, Appleton, Wis., died recently.

Charles Estes, partner in Montgomery Cotton Mills, Montgomery, Ala., died recently. He was a director of the Alabama Cotton Manufacturers Association.

James S. Gill, founder of Jewell Brook Woolen Mill, Ludlow, Vt., died recently. He was president of Verdt Mont Woolen Mills, Ludlow, and Medway Mills, Inc., West Medway, Mass., and previously had been manager of Jewell Brook Co. since it was organized in 1906.

Dr. Augustus H. Fiske, 65, died July 28, at his summer home at Cataumet, Cape Cod, Mass. Born in Boston, he was graduated from Harvard in 1901. He was connected with the Boston Cotton brokerage firm of B. H. Dickson, and in 1905 was appointed chief chemist of Rumford Chemical Works, a position he held until his retirement five years ago. He held 72 chemical patents and was the author of many books and pamphlets on chemistry.

Louis C. Perrier, 71, vice-president and treasurer of National Silk Co., South Coventry, Conn., died July 30, at Providence, R. I.

Jacob Munz, 78, president of J. B. Martin Co., Norwich, Conn., died recently.

C. A. Spencer, president of Valdese Mfg. Co., Valdese, N. C., died at his home at Morganton, N. C., recently.

Solomon Glassman, 46, an official of the Mammoth Silk Hosiery Mills, Philadelphia, Pa., died recently.

John J. White, Jr., 67, McComb, Miss., for a number of years manager of the McComb Cotton Mills, died July 22.

Charles E. Estes, cotton mill executive and operator of Montgomery Cotton Mill, Montgomery, Ala., died recently.

Samuel G. Smith, director of Frank G. North, Inc., textile chemists, Atlanta, Ga., died recently.

Stanley P. Wells, 65, former secretary and sales manager of Bailey Knitting Mills, Fort Plain, N. Y., died recently in Rochester, N. Y.

Horace Burrough III, assistant general manager of sales for Monsanto Chemical Co.'s Merrimac Division, St. Louis, Mo., died recently at Swampscott, Mass.

Frederick C. Renner, general manager of Monsanto Chemical Co.'s Organic Chemicals Division, died in St. Louis recently.

John H. Connington, who for more than 50 years conducted a cotton yarn business at Fifth and Chestnut St., Philadelphia, Pa., died recently.

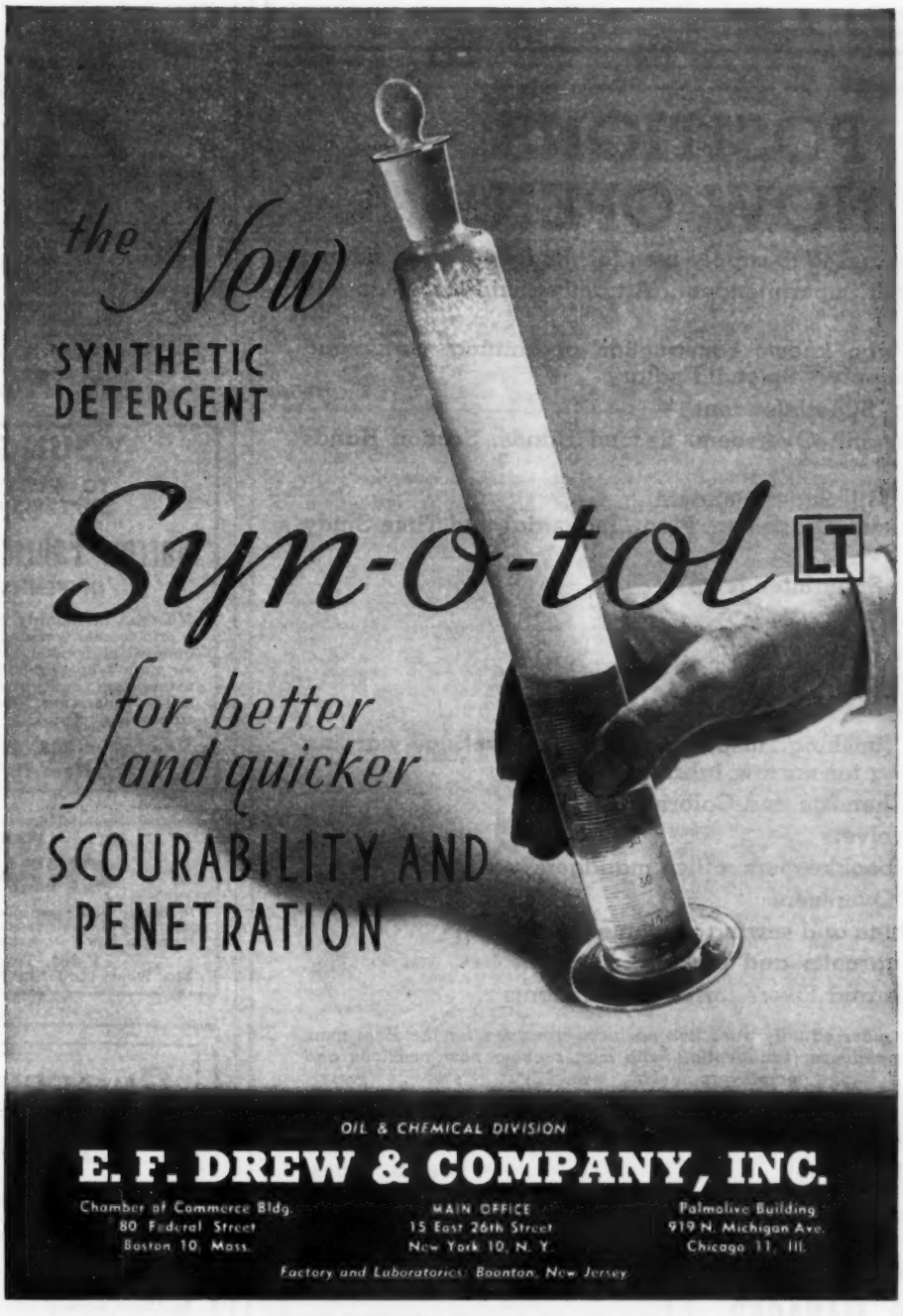
Walter D. Chase, 69, sales manager of the Martex towels division of Wellington Sears Co., New York, for many years, died recently.

William J. Robinson, 46, superintendent of Arkwright Corp., Fall River, Mass., died recently. He was superintendent at Fall River three years, and previously had been associated with Acushnet Mills as overseer, and with Hathaway Mfg. Co. as assistant superintendent. He was a member of the New England Textile Council.

E. Edward Murden died Aug. 8, at his home in Reading, Pa. A native of Nottingham, Eng., he was connected with E. Richard Meinig Co. in Reading for a number of years.

Milas G. Lynch, 53, Belmont, N. C., for 24 years superintendent of the card room of Chronicle Mill, died Aug. 11.

C. F. Springer, 71, superintendent of Crown Cotton Mills, Dalton, Ga., died Aug. 1.


the New
SYNTHETIC
DETERGENT
Syn-o-tol LT
for better
and quicker
SCOURABILITY AND
PENETRATION
OIL & CHEMICAL DIVISION
E. F. DREW & COMPANY, INC.
Chamber of Commerce Bldg.
80 Federal Street
Boston 10, Mass.
MAIN OFFICE
15 East 26th Street
New York 10, N. Y.
Palmolive Building
919 N. Michigan Ave.
Chicago 11, Ill.
Factory and Laboratories: Boonton, New Jersey

SEARCHLIGHT SECTION

(Classified Advertising)

EMPLOYMENT : "OPPORTUNITIES" : EQUIPMENT
BUSINESS : : USED OR RESALE

UNDISPLAYED —— RATES —— DISPLAYED

10 CENTS A WORD. MINIMUM CHARGE $2.00. *Positions Wanted* (full or part time individual salaried employment only) ½ the above rates payable in advance.

Box Numbers—Care of publication New York, Chicago or San Francisco offices count as 10 words.

Discount of 10% if full payment is made in advance for 4 consecutive insertions.

Individual Spaces with border rules for prominent display and advertisements.

The advertising rate is $5.75 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.

An advertising inch is measured ⅞" vertically on a column—3 columns—30 inches to a page.

POSITIONS NOW OPEN

We have been asked to supply men for the following positions:

Underwear Mill Superintendent. Attractive salary for capable man.

Yarn Buyer who knows construction of knitting yarns and source of supply. Splendid salary

Machine Shop Superintendent

Worsted yarn mill Overseers, Second Hands, Section Hands and Fixers

Woolen Yarn Mill Superintendent

Master Mechanic, Draftsmen, Plant, Industrial and Time Study Engineers

Garnett Plant Superintendent

Boss Carders

Foreman jacquard weaving

Boss Spinners

Boss Finishers

Foremen for finishing, inspecting, rubber covering, warping and beaming for narrow fabric mills

Boss Dyers, Chemists and Colorists

Shearer for velvets

Accountants, bookkeepers, office managers

Knitting Mill Overseers

Knitting machine and sewing machine fixers

Erectors for garnetts and pickers

Second Hands and Fixers for all departments

These and many other equally attractive positions are open for the right men. We invite correspondence (confidential) with men seeking new positions and employers seeking men.

Charles P. Raymond Service, Inc.

294 Washington Street Boston, Mass.

Over Forty-five Years in Business

WANTED

PRODUCTION MANAGER BRAIDED RUG MILL

Large eastern cotton rug manufacturer has opening in organization for production manager in braided rug division; excellent future for right man who must be conversant with all phases of business including raw materials, labor training, styling. State full details experience, age, compensation desired, etc. All replies will be held strictly confidential.

P-370, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

LACE DRAFTSMAN

Experienced, by well established firm in New York State. Apply in writing, stating details of experience.

P-297, Textile World
330 W. 42nd St., New York 18, N. Y.

LOOM FIXER

Experienced Jacquard & Tap fixer, on 27" carpet looms.

Write stating full experience

P-369, Textile World
330 West 42nd St., New York 18, N. Y.

POSITIONS VACANT

WANTED: KNITTED outerwear or underwear finisher. Experienced washing, scouring and fulling knitted fabrics or garments. Excellent opportunity. P-341, Textile World, 330 W. 42nd St., New York 18, N. Y.

WANTED—EXPORT Manager's Assistant: Young man, aggressive, preferably thoroughly familiar textile machinery and having some background of export-import technique, by small, long-established export-import house offering fine opportunity for one capable of assuming responsibility. When applying state experience, self-particulars, starting salary desired. All replies held strictly confidential. Write P-377, Textile World, 330 W. 42nd St., New York 18, N. Y.

POSITION OFFERING permanence and security is open with National manufacturer. Technical education and mill experience in textiles plus good sales record and following among New England and Middle Atlantic cotton mills essential. Here is real opportunity for a future career. In reply give complete detailed account of experience, education and salary desired. P-378, Textile World, 520 N. Michigan Ave., Chicago 11, Ill.

WANTED—MAN familiar with textile plant humidification and air conditioning equipment to work with air conditioning manufacturer and contractor on installation work, principally placing systems in operation. Write complete detailed information, giving background. All confidential. P-379, Textile World, 330 W. 42nd St., New York 18, N. Y.

(Continued on opposite page)

YOUNG MAN

TO ASSIST IN THE SUPERVISION OF A

Narrow Fabric Textile Mill

IN PENNSYLVANIA

Must be thoroughly familiar with narrow fabric looms, warping, spinning and have general mill experience. Good opportunity for man who wants position with a well established and growing concern. State fully experience, education, age and salary expected.

Box 808, 217-7th Ave.
New York, N. Y.

WANTED

CHEMIST

Preferably with experience in textiles, for research laboratory of fungicide manufacturer for the textile industry. New York metropolitan area.

P-285, Textile World
330 West 42nd St., New York 18, N. Y.

PROFESSIONAL SERVICES

LANCASTER, ALLWINE & ROMMEL
Registered Patent Attorney

Booklet—"General Information Concerning Inventions & Patents" and "Fee Schedules" sent without obligation.

Patents—Copyrights—Trade-Marks
Suite 448, 815—15th St., N.W., Washington 5, D.C.

DESIGN & MANAGEMENT CORP.

(Otto Engelhard, President)

Engineering, design & development of labor-saving and textile machinery (knitting machines). Inventions and products developed, fabric analysis.

82 Beaver Street New York 5, N. Y.
HAnover 2-3807

SEARCHLIGHT SECTION

POSITION VACANT
(Continued from opposite page)

FIXER—SCOTT & Williams knitting machines. Seneca Knitting Mills, Inc. Seneca Falls, N.Y.

POSITIONS WANTED

HIGHLY EXPERIENCED rayon throwster, at present employed. Desires connection with reputable company. PW-349, Textile World, 330 W. 42nd St., New York 18, N. Y.

KNITTER MECHANIC, 12 years experience on Wildman Spring needle and Scott & Williams knitting machines. Specialize in rebuilding Wildman Spring Needle. At present employed with a well established company looking forward to post-war work. PW-380, Textile World, 330 W. 42nd St., New York 18, N. Y.

EXPERIENCED CLOTH examiner, expert at weaving on rayon, wool, cotton or silk. Wants position with responsible well-established concern. Capable to instruct and handle help. Will go anywhere. PW-381, Textile World, 330 W. 42nd St., New York 18, N. Y.

WOOLEN MILL Superintendent. High class designer of men's wear, women's wear, in high or low quality woolens, worsteds. Textile school graduate. Age 38. Progressive mill essential, salary secondary. PW-382, Textile World, 330 W. 42nd St., New York 18, N. Y.

AVAILABLE: STYLIST and designer, age 38, experienced in suitings, dress wear, shirtings, upholstery and draperies, cotton, wool and rayons, mixtures or straight. Can work harmoniously with agents and principals, sales experience. Desires connection with progressive organization. PW-383, Textile World, 330 W. 42nd St., New York 18, N. Y.

MIDDLE AGED man with 18 years experience in buying cotton worsted and rayon yarns and general knowledge of knitting, dyeing and cutting. Open for position with kitknit or flatknit underwear mill. PW-384, Textile World, 520 N. Michigan Ave., Chicago 11, Ill.

WORK WANTED

SERVICES AVAILABLE by competent group of engineers and design draftsmen. Capable of designing all machine parts and making drawings or tracings for printing. Record those parts that wear excessively or redesign improved parts preventing costly machine shutdowns and delays. WW-385, Textile World, 330 W. 42nd St., New York 18, N. Y.

SALESMAN WANTED

SALESMEN WITH trade acquaintance, make up to $100 per day selling surplus listings. Part—full time. War Surplus Reporter, 20 East Jackson, Dept. 6, Chicago.

REPRESENTATIVES AVAILABLE

AGENCIES for Australia required for Manchester goods, cleaning cloth, cotton waste and general merchandise. Reply David Hyman, Merchant, 12 Henry Street, Kew, E4, Melbourne, Australia. (Bankers — English, Scottish & Australian Bank Ltd., Kew, Melbourne, Australia.)

WANTED

LONDON: A Firm of city merchants wishes to purchase quantities of men's sound second hand wearing apparel. Please send full particulars through W-386, Textile World, 330 W. 42nd St., New York 18, N. Y.

BOOKS WANTED

WANTED COPY or copies of the Rayon & Staple Fiber Handbook, third edition, by Herbert R. Mauersberger and Dr. E. W. K. Schwarz, published by Rayon Handbook Co., 303-305 5th Ave., New York. BW-387, Textile World, 330 W. 42nd St., New York 18, N. Y.

POSITION WANTED

COST ACCOUNTANT

Former supervisor substantial N. Y. City firm of accountants, specializing in costs and financial controls; thoroughly experienced in design, installation and administration standard costs; exceptional familiarity cotton, woolen and asbestos textiles, also steel mills, small tool, machine tool and abrasive plants; interested connection controller's staff major industrial; now on war-service appointment as a Principal Auditor major governmental agency; salary requirements, upper four figures.

PW-360, Textile World
520 North Michigan Ave., Chicago 11, Ill.

TEXTILE EXECUTIVE AVAILABLE

Highly capable cotton and spun rayon manufacturer. Fully familiar with modern management methods, quality, cost and production controls. American, 39, Technical Education, successful record.

Now employed, good reason for change.

Agent, Manager or Superintendent
Minimum salary $7,500.00

PW-337, Textile World
330 West 42nd St., New York 18, N. Y.

EXPERT
JERSEY DESIGNER and TRICOT MECHANIC

Offers services for permanent position. Now employed.

PW-358, Textile World
330 West 42nd St., New York 18, N. Y.

INDUSTRIAL ENGINEER

desires connection with reputable company. Four years experience planning, work simplification, time study, plus 15 years experience supervision Worsted Yarn Mfg. Definitely an asset to your organization.

PW-374, Textile World
330 West 42nd St., New York 18, N. Y.

DYEING AND FINISHING EXECUTIVE

Thoroughly experienced in plant management, processing and production, full knowledge of all equipment and its operation, desires new contact where knowledge and ability can be used to full advantage. Interested in new projects or reorganization of present set-ups.

PW-375, Textile World
330 West 42nd St., New York 18, N. Y.

Leading Textile Agency in Switzerland

is in a position to take over representation of textile-machines-manufacturers.

D. Wild, ***Technical Textile Agent,***

Textile-Machines

Richterswil, Switzerland

F. CINELLI & COMPANY
Import-Export Agency
FLORENCE, ***(Italy)***

This firm offers its services to any American industry wishing to export to this country.

It is equipped with experienced personnel able to set up a sales organization for any important American product, due to its experience of continental markets.

Mr. Cinelli intends to visit the United States in the near future.

He was born in Detroit, Michigan in 1916 and studied International Law in Post Graduate School of Yale, New Haven.

His references in the States can be obtained c/o Mr. A. Boynton Hartz, the J. F. Hartz Company, 1529 Broadway, Detroit, Michigan.

Mrs. F. Alden Hartz Cinelli
541 E. 72nd St. New York City 21

WANTED
Three Overseers For Southern Cotton Mills

1—Overseer Carding
2—Overseer Spinning
3—Overseer Weaving, plain looms

Preference will be given to man with fifteen to twenty years' experience in Southern cotton mills and having been overseer in mills operating at least 15,000 spindles and 300 looms.

Write giving full information regarding age, married or single, names of former employers, references, etc., in confidence to—

Charles P. Raymond Service, Inc.
294 Washington St. Boston, Mass.
Over 45 years Confidential Employment Service for employers seeking men and men seeking positions.

WANTED:
PLANT SUPERINTENDENT TEXTILE COATING PLANT

Well established coaters of textiles located in Metropolitan area offer excellent and unusual opportunity for a man experienced in the processing and coating of textiles and the machinery and equipment used, who is qualified to take complete charge of all production, plant maintenance and supervision of factory help. State in first letter, which will be kept in strictest confidence, your age, qualifications and past experience, and your ideas about compensation, after which an interview will be arranged.

P-362, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED
FOREMAN

Experienced screen printing on fabrics. Write experience in detail and salary wanted.

P-355, Textile World
330 West 42nd St., New York 18, N. Y.

Do You Need This Salesman?

Here is an experienced salesman who is interested in contacting a good company which wants high-calibre representation.

He has a sound record of successfully selling Textile equipment and supplies throughout the United States and Canada for over 20 years, and is well acquainted in all Mills using Rayon, Nylon and Silk.

If you have or anticipate having an opening for one who can produce, address

SA-372, Textile World
330 West 42nd St., New York 11, N. Y.

AUTOMOBILE TEXTILES

Aggressive Detroit and middle-west Representation available to manufacturer of superior line: established top-flight contacts and confidence of purchasing executives assure acceptance quality product: inquiries invited.

RA-364, Textile World
520 North Michigan Ave., Chicago 11, Ill.

(Additional Selling and Business Opportunity Advertising on page 302)

SEARCHLIGHT SECTION

NOW IN NEW YORK
SWEDISH

IMPORTER and MANUFACTURER'S AGENT

Specializing in

Natural and Synthetic fibers and yarns, Textile Machinery and Chemicals

Open to discuss Scandinavian business with reliable firms.

RA-365, Textile World
330 West 42nd St., New York 18, N. Y.

ESTABLISHED AGENT

for machinery and equipment

Calling on textile mills and finishing plants desires an additional line for the Carolinas. Prefer machinery or supply item that is a repeat seller.

Write P. O. Box 454, Greenville, S. C.

Switzerland

We search connections with first class export firms and manufacturers of the

textile branch

Offers to B. Langbecheim, Zürich, Schimmelstor. 15.

MILL WANTED

Experienced Fabric Salesman with fine contacts amongst converters and large users seeks Selling Agency of Rayon or Cotton Mill. Strictly commission basis. Will open N. Y. office at own expense.

RA-361, Textile World
330 West 42nd St., New York 18, N. Y.

WOOLEN MILL

An established going concern processing 8 to 15 cut blended yarns. Presently manufacturing 62" mens, womens wear. Can also make auto upholstery fabrics. Full automatic looms—competent supt. Good native labor conditions.

Land-Buildings-Machinery-Supplies (excluding goods in process and inventory) A going business, will be sold free and clear of all debts and obligations for $275,000.00. Principals only.

WHITE AND COMPANY

Palmer Building Atlanta, Georgia

PILE FABRICS

Mill wanted to manufacture Will supply yarn

BO-363, Textile World
330 W. 42nd St., New York 18, N. Y.

WANTED

BRAIDING MILL

WILL PURCHASE OUTRIGHT. COMPLETE BRAIDING MILL. Prefer 17 and 29 Carriers (Textile Machine).

P.O. Box 1433, Springfield, Mass.

WANTED

Surplus

Chemicals, Dyes, Gums, Oils, Waxes, Greases, Pigments, Residues, By-Products, Wastes

W-270, Textile World
330 West 42nd St., New York 18, N. Y.

FOREIGN MILL OWNERS

In buying Used American Made Textile Machinery, you need protection and advice that you can depend on. We are thoroughly experienced practical textile mill men that know our business.

We are not Machinery Dealers. Through our many sources, we will obtain for you the exact equipment to meet your requirements.

We do not deal direct, but through reputable Exporters. We can supply you with the names of these Exporters, with top Dun & Bradstreet Ratings, and you can be assured that they will protect your interests in every way.

LAWRENCE H. KELLY
Textile Machinery Consultants
P. O. Box 2442
Paterson, New Jersey, U. S. A.

FOR SALE

Scott & Williams Rib Machines

2500 Series

13 and 15"

12 and 14 cut

FS-367, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

Used Textile Testing and Laboratory Equipment

Write Full Particulars

W-357, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED
16 to 20 gauge
COTTONS PATENT MACHINES

In good condition. Write full particulars in first letter.

W-339, Textile World
520 North Michigan Ave., Chicago 11, Ill.

WANTED

Wildman Spring Needle Machine

19 inch cylinder 24 cut.

W-354, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

ANILINE AGER

State builder's name, condition, price and where it can be inspected.

W-371, Textile World
330 W. 42nd St., New York 18, N. Y.

WANTED

Crompton & Knowles 4 x 1 Automatic Looms, 76 in. to 82 in. Reed space.

W-388, Textile World
330 West 42nd St., New York 18, N. Y.

FOR SALE

Latest Models

WILDMAN
Rib Knitting Machines

12 and 14 Cut

Size range—14 inch to 22 inch

All above in good order, offered subject being unsold

FS-328, Textile World
330 West 42nd St., New York City

FOR SALE

Wildman FBSS-6 28 cut Spring Needle Machines Furnishing Wheel Stopmotions in Excellent Condition.

1-14" 16 feed
5-16" 20 feed

FS-368, Textile World
330 West 42nd St., New York 11, N. Y.

FOR SALE

Wildman 28 cut Spring Needle Machines

All sizes from 10 to 26"

Furnishing wheel equipped.

FS-366, Textile World
330 West 42nd St., New York 18, N. Y.

TROY TUMBLER

42 X 60, 2 Pockets

Completely motorized, with reverse control box. Separate lint receptacle. Complete in every detail. Practically new. Private owner.

FS-373, Textile World
330 W. 42nd St., New York 18, N. Y.

FOR SALE

100,000 8" Wool Filling Bobbins.
Price and samples on request.

5,000 Newly Cork-covererd Universal Winder Cones.
Price and samples on request.

FS-119, Textile World
330 West 42nd St., New York 18, N. Y.

1—Scheffield automatic willow rebuilt.
2—10 foot P & S willows.
2—10 feet Murry waste cleaners.
5—Hard waste or sheddy pickers.
2—P & S ceiling Condensers.
4—Kitson ceiling condensers.
4—$45 Sturtevant blowers.
Practically new card clothing for six double cylinder worsted cards.

FS-359, Textile World
330 West 42nd St., New York 18, N. Y.

FOR SALE

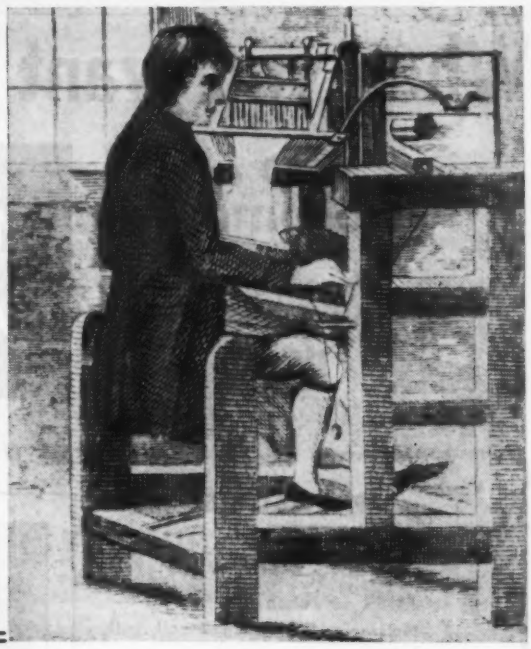
Proctor & Schwartz latest type single stage perforated plate conveyor dryer with automatic temperature controls—70 foot long—10 foot wide with 5-5 H.P. noverload fans and 5-3 H.P. noverload fans. This dryer is in excellent condition.

FS-353, Textile World
330 West 42nd St., New York 18, N. Y.

QUEEN ELIZABETH
refused to grant a patent on the first STOCKING MACHINE

WHEN the inventor, William Lee of Cambridge, applied to Good Queen Bess about 1590 for such a patent, the Queen refused, on the grounds that (1) it would make knitting too easy and deprive her subjects of work and (2) because it produced coarse worsted, instead of silk stockings. Later, even Lee's production of a pair of fine silk stockings failed to alter her decision. It was not until 1758 that the "stocking frame" was improved by one Jedediah Strutt; and the great Derby Hosiery Mills were founded in England.

Illustration from the Bettman Archive



MLC SERVING THE TEXTILE INDUSTRY MLC

1—60" C & M Brusher
1—66" C & M Brusher and Sander
3—46" x 52" Button Breakers
3—42" Butterworth 3-Roll Friction and Rolling Calender, 1—motor driven, 2-belt dr.
1—60" D. & F. 2 cyl. Iron Shoddy Card
1—Sargent Yarn Conditioning Machine
2—100 Spindle Foster Model 25 Doublers
1—36" Doubling & Winding Machine
1—46" Windle Doubler
1—4 delv. H & B dr. frame
1—Franklin Package Dyeing Unit, incl. three 100-lb. and one 300-lb. machine, extractor
1—26" Tolhurst Extractor
1—30" American Laundry belt driven extractor
1—40" Tolhurst extractor, belt-driven
1—60" Broadbent Copper Basket Extractor
2—Hunter No. 10 Fulling Mills
10—40' C & M 42", 50", 100" Folding Machines
1—52" James Smith Card Grinder
12—76" cloth Draper modified D automatic looms, 81" reed space with Lacy tops for 6 harness work, motor driven

FOR SALE

6—92" C & K 4 x 4 Box Looms, motor driven
1—72" Kenyon 2-Bowl Crab
1—80" D. & F. 20 roll Double Acting Napper
1—144 spindle Platt 2½" ring twister, motor driven.
1—96 spindle D. & F. 3½" ring twister.
9—100 spindle Saco-Lowell 3½" ring trap twisters.
1—48" S. & F. single cylinder Garnett.
1—72" P. & W. semi decator.
1—Van Vlaanderen 5 Can Narrow Fabric Finishing Machine

18—92" C & K 4 x 4 25 Harness Belt driven woolen looms
4—240 sp. D & F 2" gauge Mules
24—72" Stafford 2 x 1 automatic Looms 77" reed space, 25 harness head motions, motor driven

1—40" Parkhurst Burr Picker
3—65½" Voelker- double bed rotary cloth presses belt driven 16" cyl.
1—66" Gessner double bed rotary cloth press belt driven 12" diameter roll
1—84" Voelker Cloth Press, motor driven
1—60" C & M Plush Shear
2—66" C & M 2-Blade Shears
2—66" P & W 2-Blade Shears
1—66½" P & W Model A 2-Blade Shear
1—72" Monforts 2-Blade Shear
1—Shultze 106" Double Shear
1—Smith & Furbush Rag Shredder
1—42" C & M 5 Burner Gas Singer
12—256 Sp. Whitin 2" Ring Spinners
6—24 Spindle Fairmont Drum Spoolers for 4½ x 6" spools
10,000—4½ x 6" Wooden Spools
6—120 Spindle Draper Spoolers
1—60" C & M Tiger, Arranged for Mtr. Dr.
2—100 Spindle Foster tube winders, belt driven
1—200-spindle Draper 2¼" Ring Tape Drive Twister
5—D & F Warpers with Beamers, etc., 82" to 100"
2—54" Entwistle Warpers

MACHINERY LIQUIDATING COMPANY

OPA REGISTRATION NUMBER 789

EST. MLC 1923

31-33 West 42nd Street NEW YORK 18, N. Y.

DOMESTIC TELEPHONE PEnnsylvania 6-8014 EXPORT

SPECIALISTS IN SELLING AND PURCHASING TEXTILE MACHINERY, ACCESSORIES AND MILL SUPPLIES

When you want DEPENDABLE Equipment

USED or RECONDITIONED

•

AT A FAIR PRICE

McDOWELL ASSOCIATES

SHIPPED PROMPTLY

•

BACKED BY EXPERIENCE

We are as near as your Telephone—and as useful!

PARTIAL LIST

DYEING & FINISHING:

1—AGER 50" cloth.
1—McCreery 54" Brush 2 roll with blower.
1—Vertical 62" BRUSH 6 rolls, Calender rolling up head.
1—CALENDER 42" Friction 3 roll.
1—CALENDER 50" Cotton 3 roll.
1—CALENDER 50" Cotton 5 roll.
4—DOUBLERS 40" to 60" Cloth.
1—DECATUR, Semi 72" pump & motor.
1—DECATUR, Full 72" pump & motor.
1—DRYER, Knit Goods Drum type with additional Carbonizing section.
1—DRYER, Loop 84" Housing complete.
1—DRYER, Pin 62" Housing & fans, complete.
1—DRYER, Raw Stock approx. 200-lb.
1—DYEING Unit, Skeins 28 arms complete.
4—EXTRACTORS 24" to 60".
1—FOLDER 54" adjustable.
1—FULLING MILL Double Compartment.
1—Pr. Guiders 72".
2—KETTLES Woolen Type 6' & 12' Boxes.
4—MANGLES 40" to 66" 2 & 3 roll units.
1—MEASURING Machine 66" with clock.
5—NAPPERS 66" to 90" width, 20, 24 & 36 roll units.
2—PRESSES, Rotary 66" & 78" Double Bed Units.
3—SHEARS Single Blade Units 36" to 80" widths.
2—SHEARS Double Blade Units 66½".
3—TENTER FRAMES, Clamp, 10' x 40", 30' x 58", 60' x 80".

Near East 138th Street

SMALL WOOLEN BLANKET WEAVING AND FINISHING MILL

Consisting of 16 Automatic 4x1 Looms, complete with WET and DRY FINISHING MACHINERY and necessary Winders and Accesories. All machinery recently New or REBUILT, Motor Driven.

3—WASHERS 6' Boxes.
1—Pr. SQUEEZE Rolls 80" x 7" diameter, with size pan.

CARDING, SPINNING AND WEAVING:

1—Set 3 cylinder WOOLEN CARDS 48x48, Bramwell, feed, intermediate feed, rubb condenser.
3—SETS 2 cylinder SHODDY CARDS 60x48 and 48x60, complete.
2—SETS 5 cylinder SHODDY CARDS 48x48 complete.
4—SETS 2 cylinder WORSTED CARDS 48x48 and 60x48 complete.
5—COMBERS, Worsted complete with circles.
2—TAPE CONDENSERS for 60" Cards.
1—DRAW BOX 2 spindle 14x9.
2—FEEDS Bramwell 40" & 54".
1—GARNETT 3 cylinder 60x30, automatic feed complete.
1—GARNETT 2 cylinder 60x20.
8—GILL BOXES Single & Double head units.
2—INTERMEDIATES 9x4½, 84 spindles each.
3—Draper LOOMS D 40" cloth, 8 harness.
43—Draper LOOMS D 42" cloth, 8 & 12 harness.
60—C&K LOOMS 41½" 4x1 box.
13—C&K LOOMS 46" 4x1 Box.
160—C&K LOOMS 55" 4x1 box.
50—Draper LOOMS 90" Model L Sheeting type.
20—C&K 4x4 72" 25 harness dobby, LOOMS.
24—Stafford 72" 2x1 Box LOOMS.
18—C&K 79½" 4x1 Box LOOMS.
26—C&K 92" 4x4 Box 25 harness, motor driven LOOMS.
2—MULES 2" Gauge, 210 & 240 Spindle units.
2—MULES 650 Spindles each for Worsteds.
2—RAG PICKERS 18" x 30" Ball Bearing cylinders.
1—PICKER Waste 24" complete.
2—SPEEDERS 8x3½, 144 Spindles each.
3—SPINNING FRAMES WORSTED 3½" pitch 144 & 160 Spindle Units.
8—SPINNING FRAMES Cotton 3¼" Gauge, 208 Spindles each.
2—TWISTERS 5" Ring, 7" Gauge 88 Spindles each.
10—TWISTERS 3" Ring 216 Spindles each.
4—WINDERS Lazenby 30 Spindles each.
5—WINDERS Foster #30 100 Spindles each
2—WINDERS Universal #80 14 Spindles each.

Miscellaneous Spare Parts, Bristle Brushes, Expander Rolls, Rubber & Wood rolls, etc.

NORMAN M. McDOWELL ASSOCIATES

2568 Park Avenue — Bronx 51, New York

Tel.: MElrose 5-1772

PROUDLY WEARING THIS EMBLEM

they're coming home by thousands . . .
men and women honorably discharged
from our Armed Forces.
They want jobs. Your idle machinery will help.
List it with "CONSOLIDATED".

RECONVERSION!

Your Idle Equipment Needed Now

FOR POSTWAR JOBS AND AMERICAN PROSPERITY

SEND YOUR LIST TO

"CONSOLIDATED"

We will place it where needed

BUY AND HOLD YOUR COUNTRY'S BONDS!

EXTRACTORS
6—V.V. & Tolhurst 54" & 60"; rubber & copper baskets.
8—V.V. Fletcher & Tolhurst 40-48", copper lined.
10—Tolhurst, American Laundry, Bock & Troy 14"-42", copper baskets.
2—48" Raw Stock Extractors.
1—Hercules 30" Open Top Extractor.
1—Gessner 72" Vacuum Extractor.

SCOURING & DYEING
3—Sargent & Lorimer 2&3 bowl scourers.
6—Klauder-Weldon Skein Dyeing Machines.
1—Obermaier Yarn Dyeing Machine.
2—Buhlman 100-arm skein dyeing machines.
1—Smith Drum Skein Dyeing Machine.
1—Geyser Type Skein Dyeing machine.
9—Franklin Cast Iron Pkge. Dyers—6-600#.
2—Haveg Totally enclosed dye becks.
1—Sargent Wool Dyer.
5—American Laundry & Zephyr 2 & 3 pocket rotary dyers.
1—12-string dyeing machine.

DRYERS
3—National & P & S Loop Dryers, 30-65' long.
1—P & S 72" Raw Stock Dryer, automatic feed.
1—Phila. Raw Stock Dryer, 48" automatic feeder.
3—Sargent & Hunter Wool Carbonizers.
4—Truck Dryers, 1 & 2 trucks.
1—Multipass Airlay Dryer.
6—Proctor & Schwartz Yarn Dryers.
1—Pin Tenter Dryer, 64" wide.
1—V.V. 5-Tier Net Dryer.
2—Heathcote and Kenyon Cloth Dryers.
1—Proctor & Schwartz Hosiery Dryer.
1—Riggs & Lombard Cloth Dryer.
1—Sargent Wool Dryer. 1—P & S Apron Dryer.
1—National Loop Dryer, 96".
1—P & S Roller type Festoon Dryer.

NAPPERS
2—D & F single acting Nappers, 60 & 84".
3—Gessner & Woonsocket double acting Nappers, 60", 84" & 90".

TENTER FRAMES
1—Textile Fin. Mach., 90'x50" Tenter.
1—W & J 80'x50" Swing Tenter.
1—Heathcote Pin Tenter.
1—25' Tenter with Bakelite clips.

PALMER QUETCHES & TENTERS
2—V.V. Palmers, 60" & 72".
3—Morrison & V.V. 50", 60" & 72" Palmer Quetches.
1—Butterworth 80" Palmer.
2—V.V. & General Machine 60" Palmerettes.

PADDERS, MANGLES, QUETCHES
5—Textile & Butterworth 2-Roll Pad, 50", 62", 90".
1—Butterworth 2-Roll 80" Padder.
4—Butterworth 50" 2-Roll Starch Mangles.
1—James Hunter 50" Water Mangle.
5—Butterworth & Morrison 2 & 3-Roll Quetches, 50-72".

BUTTON BREAKERS
3—Morrison & V.V. Button Breakers, 50-72", brass rolls.

REAMERS—BATCHERS
4—Van Vlaanderen 50" & 60" Beamers.
9—Batchers, 48"-72".

FLAT FOLDERS & DOUBLERS
4—E & Hall Flat Folders, 42"-60" with motors.
3—P & W & Windle 46"-60" Doubling, Reeling & Measuring.
1—96" Doubling & Folding Machine.

COATING MACHINES
Plastic and rubber coaters, 50"-72".

SEWING MACHINES
5—Morrow 60ABB & 60D3B on stands and tracks.
3—Union Special and Singers.

BRUSHING MACHINES
2—P & W Cloth Brushers, 72" & 100".

SLASHERS
3—Saco-Lowell Cotton Slashers.

DECATERS
1—P & W 72" Decater.

WASHERS
1—Continuous 60" Boil-Off Machine, steel tanks.
1—Van Vlaanderen 60" Open Washer.
2—Open Washers, 5 & 8 compartments, 50" face.
1—3-Compartment Monel Rotary Washer.
1—60" Open Washer.

CALENDERS
2—V.V. Ball Bearing Calenders, 50" & 60".
6—V.V. Butterworth & Textile, 3, 6 & 7-Roll Hydraulic Calenders, 80".
3—Butterworth & Perkins 40", 54" & 80" 3-Bowl Schreiners.
1—Butterworth 3-Roll 54" Friction Calender.
2—54" and 65" Embossers.
1—Textile Fin. 3-Roll Narrow Friction Calender.

SHEARS
3—P & W 2-Blade Shears, 60" & 66½", complete with lint saving device and brushes.

DYE BECKS
12—Morrison & V.V. 6' to 9' Dye Becks, stainless steel and wood tubs.

DYE JIGS
2—Morrison 60" Dye Jigs.
4—Morrison Dye Jigs, 40", S.S.
1—Butterworth Scouring Jig.

DRY CANS
355—Dry Cans, 50" to 112" face, 23" to 84" dia.

Complete Silk Throwing Plant
Complete Jacquard Weaving Plant
Small Complete Woolen Mill

PRINT MACHINES & EQUIPMENT
2—BTA & BTS Motors, 25, 35 & 50 horsepower. Star gears, mandrels, copper pans & doctor blades.
1—Franklin 3-Color 45" Print Machine. Complete with Jack, and 8 Copper Rolls.

PRINTING MACHINES
7—R. B. & F. 1-10 color Print Machines, 40"-60".
1—Waldron 4-Color Wallpaper Print Machine.
1—V.V. 10-color Ribbon Print Machine.

TUBERS
5—Tubing & Measuring Machines, 50"-60".
1—Hermas 60" Measuring Machine with Motor.
3—New 60" Beamers.

KETTLES
4—Textile Copper Steam Jacketed Color Kettles, tilting, agitated, 40-150 gallons.

WEAVING MACHINES
24—C & K 92" automatic looms.
13—C & K 82" automatic looms.
10—Draper 79" automatic looms.
52—C & K 52" automatic looms.
24—C & K 4x4 Automatic Tapestry Looms, 64".
30—72" Jacquard Looms, C & K.
60—Crompton & Knowles 92" Woolen Looms.

AGERS
2—Butterworth Cast Iron Agers, 18' & 30' lg., 50-60" wide.

KNITTING MACHINES
150—1" to 21" Circular Knitting Machines.
4—Wildman 23" Ribbers.
2—Grosser Knitting Machines.

PREPARATORY MACHINES
2—Sargent & C & M Burr Pickers.
2—30" Rag Pickers.
1—40" Kitson Pickers.
1—40" Mixing Picker.
1—C & M 40" Fearnaught Picker.
2—Saco Lowell Condensers.
2—Saco Lowell Vertical Openers.
4—Pangborn Dust Collectors.
1—Conical Duster with dust blower.
1—Sargent Cotton Picker.
1—High speed warping creel.
6—Automatic Rag Picker Feeds.

CARDING MACHINES
14—Sets D&F Wool Waste Cards, 48" x 48".
3—Sets D&F Woolen Cards, 48" x 48".
1—Woolen Card, 48" x 60" diameter.
3—Sets D&F Worsted Cards, 60" x 54".
2—Sets D&F Worsted Cards, 60" x 48".
2—Sets D&F Worsted Cards, 54" x 54".
2—Furbush Worsted Cards, 48" x 48".
6—Sargent, Bramwell & Harwood Feeds.
1—Barker Triple Rub 3-bank condenser.
16—Whitin D-2 Combers.
8—Hetherington Silver & Ribbon Lap Machines.
2—5-cylinder 48"x48" Shoddy Cards, equipped with Bramwell Feeds & metallic breasts.
3—Bramwell 60" Card Feeds.

SPINNING & YARN MACHINES
52—Whitin & D&F Spinners, 240-252 spindles 2"-3½" gauge, band driven.
1—D&F Wool Spinner, 4½" gauge.
36—Deliveries H&B Drawing Frames, 12" coilers.
1—J&B 336-spindle Mule.
6—Platt Worsted Mules.
1—Sipp Double Deck Winder.
1—P-S Ring Twister, 5" band drive.
3—Fletcher Double Deck Winder.
2—Foster #101 Cone Winders.
12—Universal #50 & #90 Winders.
8—Atwood 50-B Spinners.
2—Sipp 72" Warpers.
3—Whitin & Atwood Skein Reelers.
4—Jack Spoolers, complete with creels.
7—H&B Speeders, 5" gauge.
2—Foster #12 Winders.
4—Worsted Spinning Frames.

WATER SOFTENERS
1—Permutit Water Softener, 103" lg. 63" wd.
2—10 x 10 Vertical Softeners, Zeolite.
3—Pressure Sand Filters, 8' dia. x 20' long, complete.

FULLING MILLS
2—James Hunter #10 Fulling Mills.

GARNETTS
3—James Smith 3-cylinder Garnetts.
1—P & S Single Cylinder 20x60" Garnett.
1—P & S 2-cylinder 20"x60" Garnett.

We buy from
SINGLE ITEMS
to
COMPLETE PLANTS

Send your list of Idle Equipment Now

For American Prosperity

To Create Jobs

THE KEY TO SAVING TIME AND MONEY

FOR OVER A QUARTER CENTURY A SYMBOL OF CONFIDENCE

CONSOLIDATED

PRODUCTS COMPANY, INC.

Address All Textile Inquiries to

TEXTILE DIVISION, PATERSON 2, N. J.

33-41 BERGEN ST. **TEL. ARmory 4-6540**

15 Park Row, New York 7, N. Y. Tel. BArclay 7-0600

AGER, Tower
AGITATOR, PAINT, 2 Propeller
AGITATOR, Lightning, Model D2
AGITATOR, Porter, Whirl Pool
BEAMERS, New 60" x 60" motorized
BEAMER, 60" Van Vlaanderen
CALANDERS, 52" Cavagnaro 60" K & G
DECATER, Semi C&M 72"x12" dia.
DECATER, Full, Gessner
DOUBLER, Parks & Woolson 80"
DRY CANS, 12 Copper 50" x 28" vert.
DRY CANS, 144" x 23" vert. copper
DRYERS, net Conveyor, 56" & 60" wide
DRYER, Loop P & S 30"
DYE BECKS, 4', 6' and 8'
DYE BECKS, stainless steel 4' to 20'
DYE TUBS, Copper Skein, various lengths
DYE TUBS, wood 6' complete, motorized.
DYEING MACHINE, KW 28 stick, 48" wide
EMBOSSER, 54" Textile 2 pair rolls, lever or hydraulic set optional
EXPANDERS, Rubber face, 72"
EXTRACTORS, Beam 50" & 60" BB
EXTRACTOR, Open top Hercules, 26"
EXTRACTOR, Open Top Tolhurst, 40"
EXTRACTORS, VV Copper basket 54"
EXTRACTORS, VV Rubber basket 60"
EXTRACTOR, Gessner, Vacuum 72"
FANS, Exhaust, 3 blade propeller, 30"-36"-48"
FLOCK STENCIL MACHINE, with Patterns
FLAT FOLDERS, Elliott & Hall, Adjustable
FULLING MILLS, Hunter #10
INFRA RED units, complete with blowers
INSPECTION TABLES, with DC motors, 47"
JIGGS, Cast iron 50" & 60"
JIGGS, Monel lined 60"
MEASURING MACHINE, P & W Model AWC
MOTORS, BTA, 7½ HP, 40 HP
MOTORS, Over 300 GE ¾ to 5 HP 220 volt
NAPPERS, Double & Single Act. 66" & 72"
PALMER QUETCH, 54" Butterworth
PALMERETTE, 60" face General Machine
PRINT MACHINE, 3 color 60"
PRINT MACHINE, 1 color 60"
PRINT MACHINE, 10" sample
QUETCH, 3 roll Morrison 60"
QUETCH, 2 roll Van Vlaanderen
RIBBON FIN. Unit Complete
RIBBON PRINTING MACHINE, 10 color
SEWING MACHINES, Arlington, Bicycle
SEWING MACHINES, Merrows
SHEAR, Hermas 4 knife 70" wide
TANK, rubber lined and covered
TENTER FRAME, W & J 30' x 50" wide
TIGERS, Dry P & W and C & M
TUBERS, with Examining board 80"
TUBER, Paterson Varitable speed motor
TUBER, VV with Doubling attachment
WARP COMPRESSOR CREEL
WASHER, GL Rope Type
WASHER, VV 3 compartment
WOOL WASHERS, J. Hunter, 6 & 8 ft.
WATER SOFTENER & FILTERS

We are prepared to help you in disposing of or acquiring both complete plants and individual machines. Your inquiries cordially invited.

CADGENE MACHINERY CO.
5th Ave. & McLean Blvd.
P. O. Box 1206 Paterson 4, N. J.
Sherwood 2-6577

1—#101 Foster Winder, double motor drive, 100 spindles, equipped for paper tubes and Franklin dye springs.
1—Model "G" Barber Colman Portable Tying-in Machine.
1—Model "K" Barber Colman Portable Tying-in Machine.
1—Model 4-E Barber Colman stationary Tying-in Machine.
6—7x3½ Woonsocket Speeders, 160 spindles each.
4—8x4 Woonsocket Speeders, 160 spindles each.
1—Foster 100 spindle motor driven #30 Winder, equipped for tubes and cones.
3M—Twister Spindles, complete with bases, bolsters and knee brakes.
1—Curtis & Marble Shearer, 4 knife, #A-3809-11-33, 1933 Model with Automatic Seam Lifter, without Scray and Motor, for 44" cloth.

TEXTILE SALVAGE COMPANY
P. O. Box 1461 Charlotte 1, N. C.

HARRY STEPHENSON
IMPORTER, DEALER AND MANUFACTURER
TEXTILE MACHINERY AND APPLIANCES
New and Used
River Works, Andover, Mass.

FOR SALE

5—50" Copper Dry Cans with gears & Journals.
3—65" Copper Tinned Dry Cans.
1—Bushnell Cloth Baler 60x42x29.
8—Kirschner 3 blade Beaters.
1—C&M Type A Rolling-up Head 45".
1—Sturtevant 70" Blower.
1—Boston Patent Exhaust Fan 63" (noiseless).

Attention—Cotton, Silk, Woolen & Worsted Mills

We are prepared to assist you with your bobbin requirements for reconversion. Our shops are fully equipped for re-condition, re-size or re-enamel your bobbins or spools and re-tip shewers. We also have the largest stock to select from. Send us your samples we will reply promptly.

Direct Factory Agents Walter L. Parker Bobbin & Spool Co.

BAY STATE TEXTILE CO.
220 HARTWELL STREET • FALL RIVER, MASS.

FOR SALE

Two Klauder-Weldon Skein Dyeing Machines—56 stick. One Stainless-Steel Lined for rayon, cotton and worsted; the other is Monel-Lined and is adapted for cotton and rayon.

Also a number of Foster Coning & Tubing machines, 100 spindles each. Also 50-end Foster for 4-inch traverse tubes.

WILL BUY

One or two iron perforated tubes machines, 300/600 pounds capacity. Also stainless steel package machines.

TEXTILE SERVICE COMPANY
Philadelphia 25, Nebraska 3800

LOUIS J. WELSH, Pres. & Treas. — ROBERT H. WELSH, V. Pres. & Gen. Mgr.
JOHN J. McCLOSKEY, Inc.
MANUFACTURERS AND DEALERS
TEXTILE MACHINERY OF ALL TYPES
APPRAISALS WOOLEN—WORSTED—COTTON LIQUIDATIONS
NEW AND USED
Office Factory Warehouse: Collingswood, N. J.

FOR SALE

40—All stainless steel *Jigs*
50" Wide—Swinging Top-Expanders

Apply:

TEXTILE AUXILIARIES
Providence, R. I.

GAINES TEXTILE MACHINERY CO.
Dealers In Rebuilt and Guaranteed Yarn Winding and Spinning Machinery
141-45 West 17th Street New York 11, N. Y.

AIR COMPRESSORS
17—355, 528, 730 & 1100 ft. Cap.

DIESEL UNITS
260 H.P. Superior 600 RPM Engine.
240 H.P. Worthington 3/60/2300 Generator.
130 H.P. DeLavergne 3/60/220 V. Generator.

R. C. STANHOPE, INC.
60 East 42nd St. New York, N. Y.

FOR SALE
30" LOOMS
75—Draper 30" Model E used looms in good condition. Complete with Lacey top motions, pulleys, shafting, beams, etc. Located in South.

AMES BAG CO.
10 East 40th St. New York, N. Y.

- Printing Machines
- Dry Cans
- Calenders
- Quetches
- Extractors
- Tentering Frames
- Beamers & Tubers
- Doubling & Folding

Looms—Warpers—Winders—#90 & #50 Universals
Ribbon Machinery & Equipment

A. & M. BLANK CO., INC.
49 STATE ST. PATERSON, N. J.
Sherwood 2-1367 Lambert 3-9523

Excellent Textile Equipment

SPECIAL

1—Cocker High Speed Warper, 1938 Model, Motor Driven, 440 volt Motors for Beams 54¼" between Heads, Electric Eyeboard Stop Motion, Magazine Cone Creels for 768 ends.

LOOMS

100—Draper Model K 45" Looms, Belt Driven, 8" Bobbin.

600—Draper Automatic Looms with Slashing Auxiliary equipment.

200—C & K 2 x 1 Looms.

200—600 hook C & K Double lift jacquard heads.

32—C & K #1304 Fine Index Double lift single cylinder heads.

WINDERS

15—Universal Winders with Bunch Builders.

EXTRACTORS

2—60" Steam Driven Centrifugal Extractors, Perforated Copper Baskets, Quick Opening Cover, 600 R.P.M.

1—Kranz, 42" Centrifugal Extractor, enclosed motor, perforated copper basket, quick opening safety Cover AC Motor drive.

CAN DRYERS

1—6 Can Dryer, Copper Cans, 23" diameter, 50" face, complete with exception of motors.

1—Textile Can Drying and Rolling-up machine, Copper Can 36" diameter, 50" Face.

1—Textile Finishing Machinery Company set of 8 Copper Cans—2 stacks, 4 Cans to a Stack, Vertical Stacks, 50" wide.

1—Textile Finishing Machinery Co. Copper can dryer consisting of 8 cans, 23" dia. 54" face with take-up, let-off. Reeves Variable speed transmission.

1—Textile Rolling-up and steam machine equipped with copper can 40" dia. 48" face.

1—Textile Finishing Machinery Co. 8 Can Dryer, consisting of Copper Tinned Cans, 23" diameter, 54" Face with Take-up, Let-off, Reeves Drive, A.C. Motor.

1—Van Vlaanderen 5-tier, 4 section Conveyor Dryer, with Rods, 60" face, Motor Driven Fans, Airfin Heating Units.

COTTON SPINNING UNIT

15,000 Spindles, Motor Driven Spinning Frames, Motor Driven Twisters, V-Belt Drives.

SPECIAL

DYEING EQUIPMENT

1—Rice, Barton & Fales Dye Jigg, 50" Roll, Wooden Tub, Metal-lined, complete with 2 Motors, 230 Volt, D.C.

4—Textile Dye Jiggs, 54" Wooden Tub. 2 Rubber-covered Ball Bearing Top Rolls, 4 Stainless Steel Immersion Rolls, Bevel Gear Drive with 1 DeLaval Worm Reduction Gear Unit, direct connected to Lincoln 10 H.P. A.C. Motor, 550 volts, 60 cycle, 3 phase, 1200 RPM, with Control.

TENTER FRAMES

1—Textile 40' Pin Tenter Frame, Link Belt Drive, #3 Reeves General Electric 5 HP, 60 Cycle, 3 Phase Motor, 60" wide, General Electric Guiders, Steam Heating Coils.

1—Winsor & Jerauld 40' Tenter Frame stainless steel clips. Reeves drive. A-C Motor.

1—Van Vlaanderen 50' goods, equipped with Marshal Williams Stainless steel clips. Reeves Variable speed transmission. All accessories.

1—50' Van Vlaanderen Tenter Frame, 50" wide, Enclosed Gears, Reeves Variable Speed Transmission.

COTTAGE STEAMER

1—Robert Metcalf Cottage Steamer, 10' long x 8' wide.

DYE BECKS

1—Stainless steel lined 18" dye beck Tank 18" x 30" x 96" Single Slot reel, Brass Idler rolls. Geared link chain drive.

1—20' Stainless Steel-lined Dye Beck.

QUETSCHES

1—Van Vlaanderen 3 roll quetsch 60" face, Motor driven, chain drive by 1 h.p. General Electric AC Motor.

KNITTING MACHINES

120—Circular Rib Knitting Machines, 10" to 18", 8 feed, 10 cut to 13 cut.

DOUBLERS AND TUBERS

1—Parks & Wilson 54" Doubling and Reeling.

SCUTCHERS

1—Textile 58" Roller bearing Scutcher.

SEWING MACHINES

Singer, Union Special, Merrow, Metropolitan and Willcox & Gibbs Flatlocks.

COUNTERS

34—Veeder-Root, Cloth Counters.

FOLDERS

1—Eastwood Gray Goods Folder, 60" wide.
3—E & H Flat Folders, 45" to 60" wide.

KETTLES

7—Copper Steam Jacketed Mixing Kettles, equipped with Double Motion Bronze Agitators, 70 to 350 Gallon capacity.

METERS

G. E. Steam flow meter.

DECATORS

1—Parks & Woolson 72" Semi-Decator, with Blanket, Nash Vacuum Pump and Motor.

PRINTING MACHINES

2—R. B. & F. 42" Multicolor printing machine.

PRINT MACHINE MOTORS

5—Print Machine Motors, 23 to 35 H.P.

PUMP

1—#1 Nash Engineering Pump, Type 960

BUTTON BREAKERS

2—50" Van Vlaanderen Button Breakers.

CHAIN

1—Hoey Tenter Chain, 1100 Textile Brass Tenter Clips.

4—ABBOTT AUTOMATIC WINDERS

1938 Model

90 Spindles each

Total of 360 Spindles

REMEMBER
★ ★ ★ ★
Republic Textile
EQUIPMENT COMPANY
40 WORTH STREET NEW YORK CITY
Purchase and Sale of Used Machinery
REFINANCING • APPRAISALS • PURCHASE • SALE • LIQUIDATION OF MILL PROPERTIES

TEXTILE AUXILIARIES

FOR IMMEDIATE DELIVERY FROM OUR OWN STOCK

1—84" Hurricane Loop-Dryer 32' Long
1—84" National Loop-Dryer 32' Long
3—100 HP Motors 400 & 440 V. 2 Phase 600 RPM.
1—46" P & W Doubler & Roller
1—50"—3 Roll Rayon Calender (Morrison)
1—75 HP 440 Volts 2 Phase—690 RPM.
1—50" Sprinkler
1—66" Brusher 3 Tampico Brushes—5 Wire
1—80" Warp Chain Dryer with 7½ HP Motor
2—A & G 50" Loop Dryers
1—B & B Baling Press
2—E & H Folder 48 & 50" Wide
5—40" 2 Roll Padders
1—50" Gessner Apron Press
1—54" Embossing Calender (Hydraulic)
3—44" Shreiner Calenders (Hydraulic)
2—Jack. Copper Kettles Agit. & Stand 75 & 100 Galls. Cap.
31—50" Copper Cans 23" Diam.
28—44" Copper Cans 23" Diam.
31—40" Copper Cans 23" Diam.
3—36" Hydro-Extractors
1—7 Bowl 50" Calender (Roller Bearings)

TEL. DEXTER 9650 — 1128 N. MAIN ST.

PROVIDENCE, R. I.

FOR SALE

1—Textile 90' x 60" Clip Over and Under Tenter
1—Proctor & Schwartz 88" Loop Cloth Drier
1—Continuous Indigo Yarn Dyeing Range
1—Mycock 48"—3 Brass Bar Expander
1—65" Face Rubber Covered Mangle Roll
1—Back Filler 42" Face Roll, Expander
1—Franklin 200# Iron Package Dyer

JAMES E. FITZGERALD

10 Purchase Street — Fall River, Mass.

COTTON MACHINERY FOR SALE IN CANADA

196—40" Revolving Top Flat Cards
234—Dels. Cork Top Roll Drawing, 12" Coilers
26—Roving Frames, 12 x 6 and 9 x 4½
32,000—Spindles Band Drive Spinning; Warp & Filling
6—Spoolers & Fibre Head Spools
3—Universal No. 44 Roto-Coners, 120 Spindles Each. Spools, Bobbins, Motors, Shafting, Hangers, Etc.

All machinery now in operation. Mill prefers to sell all to one interest. Will guarantee delivery of 50 cards, 72 deliveries of drawing, 4 roving frames and 16,000 spindles of warp spinning during November of this year. Balance in 1946. *Offered exclusively by:*

J. H. WINDLE & COMPANY
231 So. Main St., Providence 3, R. I.
Tel. Gaspee 6464

TWISTING
WINDING
KNITTING
BRAIDING
ROPE
MACHINERY

Complete stocks of Winding, Twisting, Braiding, Knitting and Rope Machinery at reasonable prices.

Immediate cash for your surplus Twisting, Winding, Braiding, Knitting and Rope Machinery. Send your list today.

Textile Equipment Specialists

ROBERT SOLOMON & CO., Inc.
30 WEST HOUSTON STREET • NEW YORK, N. Y.

MACHINERY FOR SALE

22—Bramwell Feeds—Whitin—39"
4—Sliver Lappers—Whitin
4—Ribbon Lappers—Whiting
16—Combers—Whitin—Model D
8—Combers—Whitin—Model C
1—Slubber—Lowell—11 x 5½—72 Spindle
1—Intermediate — Saco-Pettee — 10 x 5 — 84 Spindle
2—Interdrafts—Whitin—9 x 4½—114 Spindle
2—Interdrafts—Woonsocket—8 x 4—128 Spindle
5—Fine Frames—Lowell—7 x 3½—168 Spindle
2—Fine Frames—Saco-Pettee—7 x 3—176 Spindle
90—Cone Winders — Saco-Lowell — Camless — 16 Spindle
3—Tube Winders — Saco-Lowell — Camless — 16 Spindle
1—Bobbin Stripper—"Airway"
16—72" C & K Looms—4 x 1 Automatic—Intermediate Head—25 Harness Silk Looms
8—72" C & K S—3 Looms—2 x 1 Shuttle Changing—Intermediate Head

AMOSKEAG-LAWRENCE MILLS, INC.
Manchester, N. H.

HOSIERY MACHINES

KNITTERS - RIBBERS - LOOPERS
CYLINDERS - DIALS - TRANSFERS
RIBBER CYLINDERS & DIALS
UNION SPECIAL SEAMERS
NEEDLES FOR EXPORT

C. M. FRENCH
Commercial Trust Bldg., Philadelphia 2, Pa.

KNITTING MACHINES

Scott & Williams — Banner — Wildman — Reading — Kalio — etc., etc.

All types of hosiery mill equipment on hand

THE MORRIS SPEIZMAN CO.
508-14 West Fifth St. Charlotte, N. C.

DIESELS

240 HP Buckeye
Model "P" with Generator
3 cyl—13½" x 18"—300 RPM
Just Rebuilt
Owner must have the space
BARGAIN

ROBERT SCHOONMAKER
Port Washington, Long Island, N.Y.
Phone Roslyn 1220

FOR SALE

BUTTERWORTH CALENDER

7 ROLLS—80" FACE

3 Composition Rolls, 4 Steel Rolls, Hydraulic lift —water-cooled journals. Located in South.

AMES BAG CO.
10 EAST 40TH ST. NEW YORK CITY

FOR SALE

"9 Universal Leesona #90 Filling Winders, equipped with bunch builders for automatic looms, length of bobbin 8¾ inches, 20 spindles per unit, individual motor drive. Excellent condition.

ROCK RIVER WOOLEN MILLS
Janesville, Wisconsin

INDEX TO ADVERTISERS

■ ■ ■

PROFESSIONAL SERVICES

Lancaster, Allwine & Rommel.... 300
Loper & Co., Ralph E..... 292
Sirrine & Co., J. E..... 296
Design & Management Corp..... 300

■ ■ ■

SEARCHLIGHT SECTION
(Classified Advertising)

BUSINESS OPPORTUNITIES..... 302
EMPLOYMENT SERVICE 300
Raymond Service, Inc.
Charles P. 300
MILLS WANTED 302
POSITIONS VACANT 300, 301
POSITIONS WANTED 301
SELLING OPPORTUNITIES...301, 302
SPECIAL SERVICES 302
WANTED TO PURCHASE..... 302
USED EQUIPMENT 302-309
Ames Bag Co.....306, 308
Amoskeag-Lawrence Mills Inc... 308
Bay State Textile Co..... 306
Blank Co., Inc., A. M..... 306
Cadgene Machinery Co..... 306
Consolidated Products Co., Inc.. 305
Fitzgerald, James E..... 308
French, C. M..... 308
Gaines Textile Mchy. Co..... 306
Kelly, Lawrence H..... 302
Machinery Liquidtating Company 303
McCloskey, Inc., John L..... 306
McDowell, Norman M..... 304
Paterson Silk Machinery Exchange 309
Republic Textile Equipment Co.. 307
Rock River Woolen Mills..... 308
Schoonmaker, Robert 308
Solomon & Co., Robert..... 308
Speizman, Morris 308
Stanhope, R. C..... 306
Stephenson, Harry 306
Textile Auxiliaries 306, 308
Textile Service Co..... 306
Textile Salvage Co..... 306
Windle, J. H..... 308

Less Cost the Paterson Way

Initial costs are substantially lower when your machinery needs are filled from Paterson's complete stock of ready-to-go textile equipment Savings are further reflected in increased production and economy of operation. Consult us on your particular needs and learn why Paterson Service is the accepted Standard of Value today.

SPECIAL

TWISTERS FOR LARGE PACKAGES

120—Fletcher double deck spinners, 64 spindles each deck or 128 spindles to the machine. Each deck individually motor driven by a 3 H.P. motor. 7" center to center spacing. 4¾" cork covered take-up rollers.

- 24—Crompton & Knowles—4 x 4—48" Jacquard Looms
- 30—Crompton & Knowles—2 x 2—48" Jacquard Looms

  Above Looms complete with paperless beams electric warp stop motion, pick counter, individually motor driven, extended bottom shafts for double lift Jacquards
- 68—Crompton & Knowles—600 hook double lift Jacquard machines to go with the above Looms
- 20—Crompton & Knowles, 4 x 1, 52" Looms, roller bearing, shock absorber, high pick-wheel, removable cloth rollers individually motor driven, warp stop motions and pick counters
- 16—56" 4 x 4 Crompton & Knowles Jacquard looms
- 8—4 x 4, 72" Crompton & Knowles Worcester looms, roller bearing stock absorber, motor driven, 1 HP, 3 phase motors, oversized shuttle boxes, extended bottom shaft for Jacquards
- 10—4 x 4, 64" Crompton & Knowles Worcester looms, motor driven, extended bottom shafts for Jacquards
- 200 Universal #90 quillers or coppers, with or without bunch builders, belt driven or motor driven
- Sipp or Eastwood winders to wind from skein to spool
- Sipp or Eastwood warpers and creels
- 40—78" 2 x 1 Crompton & Knowles looms. Roller bearing, shock absorber 20 harness, intermediate head, individually motor driven. ¾ h.p. motors
- 160—45" reed space, Draper automatic looms, 2 harness, roller motion gooseneck cutters, Roper let-offs, positive feelers, worm take ups
- 10—76" 4 x 4 Crompton and Knowles woolen looms, 25 harness, intermediate head, motor driven
- 23—75½" reed space Stafford Automatic bobbin change looms, 2 harness, roller top, ratchet take-up, friction let-off, positive feelers
- 16—64½ reed space Stafford looms as above described

LOOMS
WARPERS
WINDERS
JACQUARD MACHINES
SPINNING AND THROWING MACHINES

PARTIAL LISTING ONLY

Write us of your particular requirements. Immediate attention given to every inquiry.

Shuttles - Quillers
COPPERS
FINISHING MACHINES
DYEING MACHINES
TEXTILE MOTORS
HARNESSES

PATERSON
SILK MACHINERY EXCHANGE

24 Spruce St., Paterson, N. J. **SHerwood 2-1363-4-5**

EMERY
Textile Oils

for

lubrication

•

conditioning

•

wet finishing

Specific Properties...Uniform Performance

• Leaders in the textile industry have come to depend on Emery for Oleic Acids (Red Oils), Stearic Acids, and Twitchell Oils because the performance and range of characteristics offered meet their particular needs exactly.

Emery's ability to supply the exact oil needed has kept pace with progress in the Textile Industry. Write us your problem today.

STANDARD EMERY TEXTILE CHEMICALS

FOR COTTON: Stearic and Oleic Acids, Twitchell Oils 3X and 304 of regular and sanforized finishing.

FOR WOOL: Red Oils; Wool and Worsted Oils (for lubrication in carding, combing, spinning, and weaving operations).

FOR RAYON: Oleic Acids, Twitchell Oils 681, 685, and 687 for the manufacture and processing of man-made yarns and fabrics.

EMERY INDUSTRIES, Inc.

STEARIC ACID • OLEIC ACID • ANIMAL, VEGETABLE and FISH OIL FATTY ACIDS • TWITCHELL PRODUCTS • PLASTICIZERS

4300 CAREW TOWER • CINCINNATI 2, OHIO

3002 Woolworth Bldg., New York 7, N. Y.

187 Perry St., Lowell, Mass. • 401 N. Broad St., Philadelphia 8, Pa.

INDEX TO ADVERTISERS

AN * Indicates additional data is in the 1944 Textile World Yearbook and Catalog

*Abbott Machine Co..... 233
Acme Knitting Mach. & Needle Co. 289
*Acme Steel Co..... 271
Air Permeator Mfg. Co... 252
Alabama Power Co..... 174
Aldon Spinning Co..... 277
Alleghany Ludlum Steel Corp. 29
Allen Company 269
*Allis-Chalmers Co...6, 7, 13
*Alloy Steel Products Co.. 75
American Air Filter Co... 48
American Crayon Co..... 246
American Cyanamid Co. 95, 241
American Finishing Co... 271
American Gas Association 205
American Magnesium Corp. 93
*American Monorail Co... 38
American Viscose Corp.. 158
American Woolen Co..... 279
American Yarn & Processing Co. 298
Arco Co., The..... 264
*Aridye Corp. 146
*Arkansas Co., Inc..... 287
Arlington Mills 286
Armour & Co..... 66
Armstrong-Bray & Co.... 297
*Armstrong Cork Co.....9, 34
*Armstrong Mach. Works. 226
*Ashworth Bros. Inc..... 36
Atlantic Rayon Corp..... 262
*Atlas Electric Devices Co. 232
Atwood Mach. Co....180, 181
*Bahnson Co. 218
*Barber-Colman Co. 281
Barnes Co., Henry K. Inside Back Cover
Becco Sales Corp..... 69
*Birch Bros. 269
Boger & Crawford Co.... 197
*Booth Co., Benjamin..... 256
Borne-Scrymser Co..... 312
Bradley Washfountain Co. 206
Breuer Electric Mfg. Co... 291
Brinton Co. 289
Buffalo Forge Co..... 237
Bunting Brass & Bronze.. 97
Burkart-Schier Chem. Co.. 284
*Butterworth & Sons Co... 263
Calco Chemical Div. American Cyanamid Co. 241
*Caldwell Co., W. E..... 271
Calgon, Inc.....234, 238, 242
*Cameron Machine Co..... 292
Carbomatic Corp..... 255
Carrier Corp. 82
Century Electric Co..... 77
*Chapman Elec. Neut. Co.. 294
Cheney Bros. 215
*Chicago Pneumatic Tool.. 104
Cities Service Oil Co..... 99
Clipper Belt Lacer Co.... 28
Cloverleaf Mfg. Co..... 296
Cole Mfg. Co., R. D..... 234
Commercial Factors Corp. Inside Front Cover
Commonwealth Color & Chem. Co. 278
Cooper Co., Chas..... 279
Corn Products Sales Co... 283
*Crabb & Co., Wm..... 39
*Crane Co. 94
*Crane Mfg. Co..... 291
Crocker - Wheeler Div. Joshua Hendy Iron Wks 113
*Crompton & Knowles Loom Works 91
Crouse-Hinds Co. 47
*Curtis & Marble Mach. Co. 244
Dana Warp Mills..... 277
Darnell Corp., Ltd..... 229
*Dary Ring Traveler Co... 266
*Davis & Furber Mach. Co. 271
*Dayton Rubber Mfg. Co.. 21
*DeBothezat Fans Div. American Mach. & Metals, Inc. 263
Devoe & Raynolds Co.... 292
*Diagraph-Bradley Stencil Mach. Corp. 259
Diamond Alkali Co., Standard Silicate Div... 295
Diastafor Division, Standard Brands, Inc..... 244
Dietert Co., H. W..... 290
*Dinsmore Mfg. Co..... 289
Dodge Mfg. Co..... 102
*Dommerich & Co., L. F... 54
Dow Chemical Co., The 148, 195, 199
Doyle Co., J. E..... 297
*Draper Corporation..... 1
Draper Soap Co..... 232
Drew & Co., E. F..... 299
DuGrip Mfg. Co..... 290
*Du Pont de Nemours & Co., E. I. Finishes Div. 109
Rayon Div. 22, 23
Durant Mfg. Co..... 268
Eastern Commercial Travelers 230
Eastern Stainless Steel Corp. 41
Emery Industries, Inc..... 310
Eriez Mfg. Co..... 25
*Fairbanks, Morse & Co... 265
Fall Yarn Mills..... 254
*Faultless Caster Corp.... 200
Federal Tel. & Radio Corp. 87
*Fidelity Machine Co..... 294
*Finnell System, Inc..... 261
*Fletcher Works, Inc..... 231
Flexible Steel Lacing Co.. 263
Ford Motor Co..... 12
Foxboro Co., The..... 96
Franklin Process Co..... 35
*Fuller Brush Co., The... 191
Gardner-Denver Co. 88
*Gates Rubber Co., The... 92
General Chemical Co..... 103
General Dyestuff Corp.... 89
*General Electric Co....44, 45
Gilmer Co. L. H. (Div. of U. S. Rubber Co.)..... 85
Glidden Co. 62, 63
Goodrich Chemical Co., B. F. 101
Grinnell Co. 43
Gulf Oil Corp—Gulf Refining Co. 112
Hagan Corp. ...234, 238, 242
Hart Products Corp..... 156
Henry, A. K..... 213
Hinde-Dauch 31
Hooker Electrochemical Co. 243
Horn Co., A. C..... 56
Houghton & Co., E. F.... 51
*Howard Bros. Mfg. Co... 30
*Hunt Mach. Co., Rodney. 297
*Hunter Machine Co., J.... 217
Huyck & Sons, F. C..... 269
Hyatt Bearings Division, General Motors Corp.. 166
*Industrial Dryer Corp.... 248
Industrial Rayon Corp.... 37
*Industrial Steels, Inc..... 154
*Ingersoll-Rand 79
International Nickel Co.. 110
*International Salt Co..... 245
*Ives Co., L. T..... 291
Jenkins Sons, M. W..... 250
Johnson & Sons, S. C.. 19, 59
Johnson Fan & Blower Co. 257
Johnson Mach. Wks. C. B. 212

(Continued on page 312)

TIME SHORT?

Have the multitudinous demands of war-paced days forced you to defer your investigation of a new location for your operations?

No need for concern! We know where the desirable sites are. We have complete information on the many factors which you will want to consider before choosing a site for your textile plant.

Our trained specialists can supply you quickly with facts about choice locations in our territory. Your inquiry will be held in strict confidence. A request for our services entails no obligation or cost on your part. Simply address:

Dallas T. Daily
General Industrial Agent
Seaboard Air Line Railway
Norfolk 10, Virginia

SEABOARD
AIR LINE RAILWAY
THROUGH THE HEART OF THE SOUTH

DON'T SWEAT OVER WET PLANT DETERIORATION ...RUST OR FUNGUS

STOP THEM WITH AMAZING DAMP-TEX ENAMEL

The Damp-Tex system of painting stops rot, rust, bacteria and fungus growth. Puts a porcelain-like finish on wet or dry wood, metal, concrete and plaster with equal ease and efficiency. Damp-Tex resists steam, 2% caustic solution and lactic acid. Comes in white and colors. Used in over 4,000 plants. Send for details of our trial offer.

LIQUID PORCELAIN-LIKE DAMP-TEX FOR WET OR DRY SURFACES

STEELCOTE MFG. CO. • ST. LOUIS, MO.

Canadian Manufacturer: Standard Paint & Varnish Co.—Windsor, Canada.

Today . . .

IT'S QUALITY THAT COUNTS!

The trade knows that modern standards . . . war standards . . . demand A-1 quality. And they know, because of 68 years of experience, that BORNE SCRYMSER WOOL OILS give them not only the highest quality but value as well.

★ **BRETON OILS FOR WOOL**

★ **XX SAPONIFIED OIL FOR WOOL**

★ **RER SPECIAL WOOL OIL**

★ **SS WOOL OIL**

Highest quality also in:

Apron Oils • Shear Oils • Loom Oils
Comb Box Lubricants
High Pressure Greases
High Temperature Greases

This Seal Your BRETON OILS for WOOL Quality Assurance

BORNE SCRYMSER COMPANY

Originators of the BRETON MINEROL PROCESS for FIBRE CONDITIONING
ESTABLISHED 1874

ELIZABETH, N. J. CHARLOTTE, N. C.

NEW ENGLAND REPRESENTATIVES

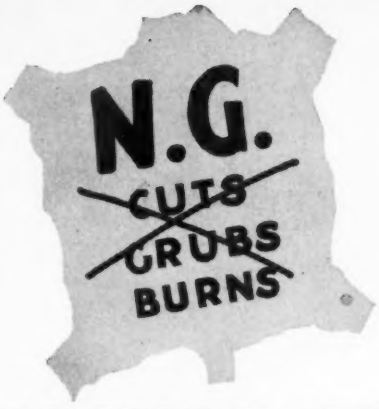
A. M. KNIGHT, WEST YARMOUTH, MASS.
S. T. DOUGLAS, JR., WESTWOOD, MASS.
W. M. DYNES, WEST SPRINGFIELD, MASS.

SOUTHERN REPRESENTATIVES

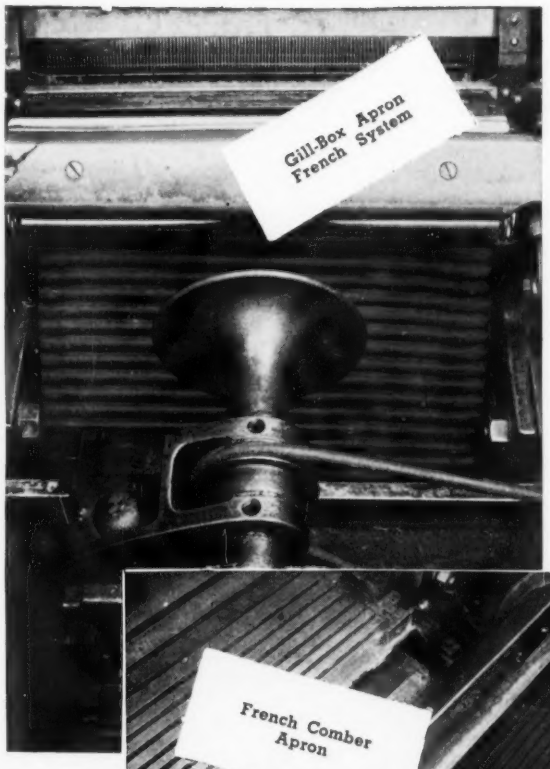
R. C. YOUNG, CHARLOTTE, N. C.
JOHN FERGUSON, LA GRANGE, GA.

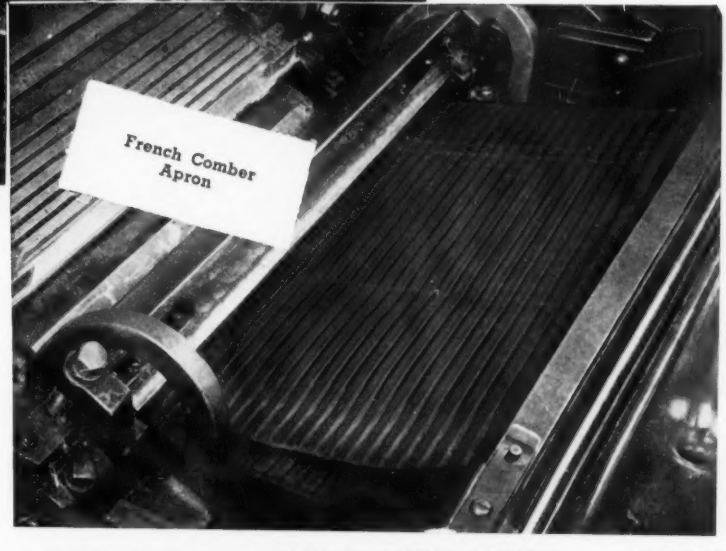
(Continued from page 310)

Kaumagraph Co. 185
Keever Starch Co., The.. 293
Kenyon & Son, D. R..... 295
*Lane & Bros., Inc., W. T.. 265
*Laurel Soap Mfg. Co..... 255
Lazenby & Co., F. A..... 254
Lestershire Spool & Bobbin Co. 152
Loper Co., Ralph E..... 292
*Lowell Shuttle Co..... 214
Lubriplate Division, Fiske Bros. Refining Co..... 260
Lunkenheimer Corp. 220
Maguire & Co. J. P..... 50
Manheim Mfg. & Belting Co. 106
*Mathieson Alkali Works. 2
Meese, Inc. 282
Merrow Machine Co..... 279
Minot Hooper & Co..... 208
Monomac Spinning Co.... 286
*Monsanto Chemical Co... 10
Murray Mfg. Co. D. J.... 265
National Aniline Division Allied Chem.&DyeCorp. 53
*Nat'l Drying Machy. Co.. 240
National Lead Co..... 98
National Oil Products Co. 249
*Nat'l Ring Traveler Co... 277
*Nat'l Starch Products.... 187
New Departure, Div. of General Motors 11
New Haven R. R..... 172
Niagara Alkali Co..... 227
N.Y.&N.J. Lubricant Co. 277
Nonquit Mills 286
Norfolk & Western R. R.. 164
*Noone's Sons Co. Jos..... 272
No. American Rayon Corp. 20
*Norma-Hoffmann Bearings Corp. 68
Oakite Products, Inc..... 267
Old Dominion Box Co.... 162
*Onyx Oil & Chem. Co.... 251
Otis Elevator Co..... 58
Page Steel & Wire Div. American Chain & Cable Co., Inc. 203
Parks-Cramer Co..... 276
Penick & Ford, Ltd..... 295
*Perkins & Son, B. F..... 18
Phila Quartz Co..... 236
Pick Mfg. Co..... 73
Pike Co., E. W..... 269
Pioneer Salt Co..... 293
*Pittsburgh Corning Corp. 105
*Pittsburgh Plate Glass Co., Columbia Chemical Div. 57
Powell Co., Wm..... 84
*Powers Regulator Co..... 258
Prince, Smith & Stells... 225
Procter & Gamble Co..... 60
*Proctor & Schwartz, Inc.. 219
Pyrene Mfg. Co. 202
Quaker Chem. Prod. Corp. 176
Railway Express Agency, Air Express Div..... 198
Rayonier Inc. 207
Red Ray Mfg. Co..... 282
Reeves Pulley Co..... 100
Refiners Lubricating Co.. 211
Refinite Corp., The..... 248
*Reiner, Inc. R..... 221
Republic Steel Corp..... 61
Reynolds Metals Co..... 83
Richmond Oil, Soap & Chemical Co. 254
*Riggs & Lombard. Inc.... 246
Robison Processing Co... 238
Rome Soap Mfg. Co..... 295
Ryerson & Son, Inc., J. T. 230
St. Louis Terminal Warehouse Co. 270
*Saco-Lowell Shops 14
Sandoz Chemical Works.. 17
*Sarco Co. 67
*Sargent's Sons Corp..... 40
*Scholler Bros., Inc..... 259
*Scott Testers, Inc..... 294
Scott & Williams, Inc.... 285
Seaboard Air Line R. R... 311
Sinclair Refining Co..... 74
Sipp-Eastwood Co. 267
Sirrine & Co., J. E..... 296
Sisalkraft Co., The..... 222
SKF Industries Inc..... 46
*Smith Drum Co. 150
Socony-Vacuum Oil Co... 15
*Solvay Sales Corp..... 288
*Sonneborn Sons, Inc., L... 189
*Sonoco Products Co..... 183
Southworth Machine Co.. 298
Specialty Products Co..... 8
Split Ballbearing Co..... 257
Staley Mfg. Co., A. E..... 209
*Standard Chemical Products, Inc. 160
*Standard Soap Co. of Camden 250
Star Electric Motor Co... 55
Steel Heddle Mfg. Co. 274, 275
Steelcote Mfg. Co..... 311
*Stein-Hall Co. 253
Sterling Ring Trav. Co... 236
*Sturtevant Co., B. F...32, 33
Sun Oil Co. 144
Sylvania Electric Products, Inc. 223
Taylor Instrument Cos.... 76
Taylor-Stiles Co. 242
Techtmann Industries ... 256
Tennant Co., G. H..... 216
Tennessee-Eastman Corp.. 49
*Terrell Machine Co,..... 284
Texas Co. .....Back Cover
Textile Banking Co..... 210
Textile Mach. Works 107, 108
*Thomas & Skinner Steel Prod. Co. 240
Tide Water Asso. Oil Co.80, 81
*Tolhurst Div. 261
Tompkins Bros. Co..... 291
*Torrington Co., The..71, 72
Trumeter Co. 267
Trust Company of Ga.... 280
Tubize Rayon Corp..... 24
Ultra Chem. Wks. Inc.... 65
Union Special Mach. Co.. 239
United Autographic Register Co. 78
US Bobbin & Shuttle Co.. 50
U. S. Gutta Percha Paint Co. 111
*U. S. Ring Traveler Co... 252
U. S. Textile Machine Co. 256
Universal Winding Co. 114, 192
*Van Vlaanderen Mach. Co. 64
Virginia Smelting Co.... 293
Vita-Var Corp..... 5
Wabash Appliance Co.... 196
WAK Industries 296
Waldron Corp., John.... 168
Wallerstein Co., Inc..... 295
*Walton Laboratories, Inc. 224
Watson-Williams Mfg. Co. 298
Wayne Mfg. Co..... 254
West Disinfecting Co.... 204
*Westinghouse Elec. Corp. 26, 27, 52, 170
West Pt. Fdry. & Mach. Co. 42
*Whitin Machine Works.. 16
*Whitinsville Spg. Ring Co. 277
Whitman Co., Inc., Wm.. 286
Whitney Chain & Mfg. Co. 86
Wildman Mfg. Co..... 273
Willcox & Gibbs Sewing Mach. Co. 235
*Wolf & Co., Jacques..... 70
Wolstenholme Co. 277
Wright Mfg. Division, American Chain & Cable Co., Inc..... 201
Wyandotte Chem. Corp.. 247
Searchlight Index....Page 308



BARNES TANS ONLY THE RIGHT LEATHER *for* FRENCH COMB *and* GILL BOX APRONS





You can rely on BARNES, the TEXTILE leather house of long experience, to buy the right leather for use in your mill. We buy only the FINEST Foreign and Premium Domestic Steer Hides. For APRONS, we pay a cent or two extra to obtain hides free of grubs, barbed-wire scratches, slaughter cuts, and other imperfections which would prove inferior. We insist on hides taken from steers killed in the best months of the year, avoiding in particular the manure burns of the winter months. And in these hides we carefully select and cut the correct part for the particular needs of your combs and gill boxes. As in the case of wool, the selection and purchase of the right raw materials is only half of the story. The correct processing is the other half. In our own tannery we apply the particular tanning which our research and years of experience have proved provides long life and good service with maximum economy.

Even thickness throughout, Minimum stretch, Run straight. Strong flexible waterproof lap of even thickness overall.

•

BARNES PRODUCTS MADE OF SELECTED HIDES

Aprons for Combing, Preparing, Finishing and Drawing FRENCH AND BRADFORD SYSTEMS

Chrome—Brown—Special Tan
Plain and Hair-On Loom Strapping

BELTING

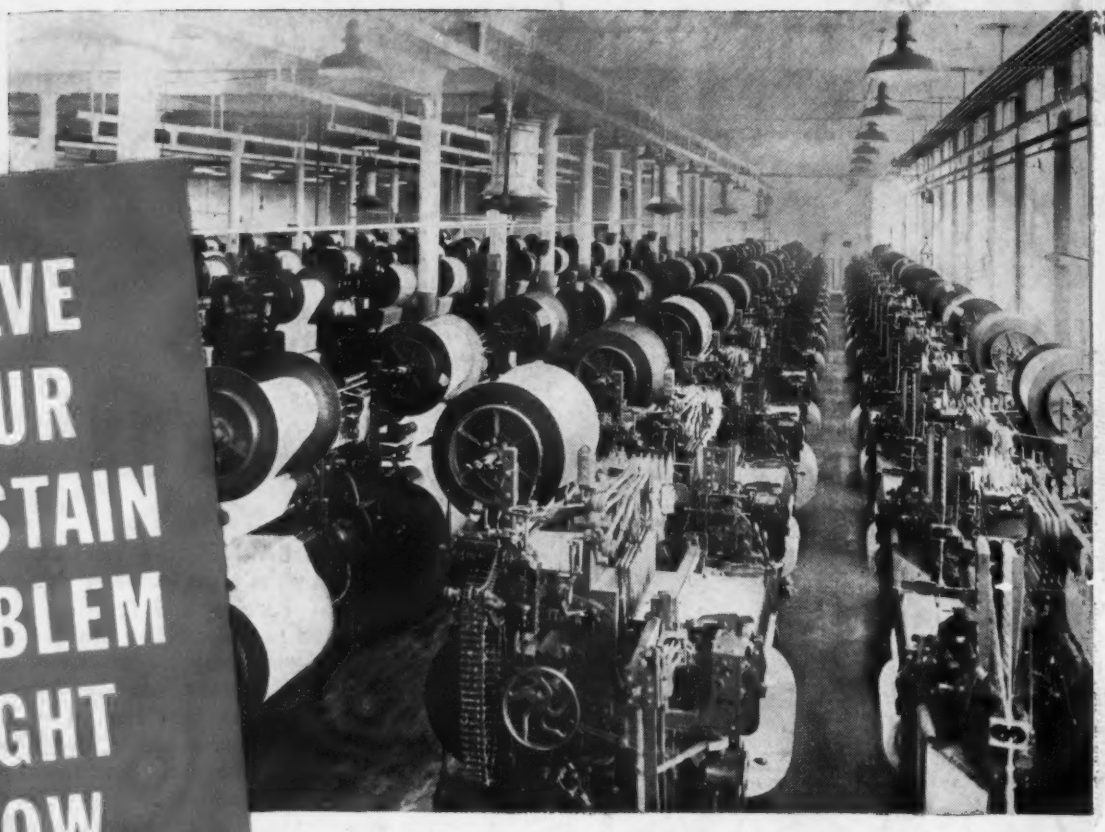
First-Quality Center Stock
Prestretched and Manufactured for Each Drive Condition
Available in All Tannages

HENRY K. BARNES COMPANY • SALEM, MASSACHUSETTS

BARNES THE *Textile Leather* HOUSE

SINCE 1876

Where unusual knowledge of Leather is combined with long years of Textile experience
APRONS—BELTING • FLAT • ROUND • & ACCESSORIES—STRAPPING



SOLVE YOUR OIL STAIN PROBLEM RIGHT NOW

. . . by using the Lubricant that . . .

★Maintains high stability
★Stays on cranks, off fabric
★Does not splatter, creep or drip
★Withstands load shocks

WHETHER spinning yarn or weaving cloth, oil stain will present no problem when you lubricate your machines with *Texaco Stazon.*

Texaco Stazon, as its name implies, *stays on* fast-moving cranks and bearing surfaces of today's high-speed looms—assures thoroughly effective lubrication of top rolls, comb boxes and other equipment—without splattering, creeping or dripping. Even under conditions of extreme humidity, *Stazon* retains its high stability and lubricating qualities, preventing formation of gummy deposits in bearings and enclosed housings.

Because of these outstanding qualities, *Texaco Stazon* cuts lubrication and maintenance costs, prolongs loom life, and reduces stock spoilage to an absolute minimum.

Texaco Lubrication Engineering Service is available through more than 2300 Texaco distributing plants in the 48 States. Get in touch with the nearest one, or write:

☆ ☆ ☆

The Texas Company, 135 East 42nd Street, New York 17, N. Y.

TEXACO
REG. T.M.

TEXACO Lubricants

FOR THE TEXTILE INDUSTRY

TUNE IN THE TEXACO STAR THEATRE WITH JAMES MELTON EVERY SUNDAY NIGHT—CBS